SEPTEMBER • 1958

FIREMEN

VOLUME 28, NUMBER 9, COPYRIGHT 1958 NATIONAL FIRE PROTECTION ASSOCIATION PRINTED IN U. S. A.

Action at a Firemen's Muster — *see page 19*

ONAL FIRE
TECTION
CIATION

63rd
year

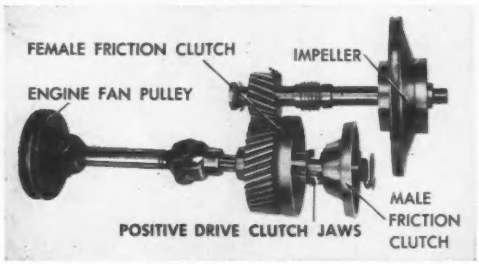
FIRE CHIEFS' CONVENTION ISSUE

25 YEARS OF GROWTH! › › › › › › Page 21

only ONE fire pump has it...

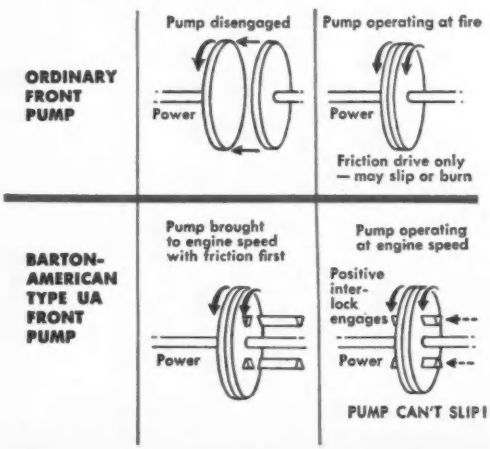
THE CLUTCH THAT *CAN'T* SLIP!

PUMP OPERATING POWER TRAIN



Gear-driven centrifugal design . . . pressures to 400 pounds for high-pressure Super-Fog Guns or large straight streams.

DIAGRAM — SIMPLIFIED TO SHOW BASIC PRINCIPLE OF POSITIVE DRIVE CLUTCH



That's right — you'll never stand helpless at a fire with a slipping or burned-out pump clutch — if you're operating a Barton-American Type UA Front Mounted Pump!

This clutch *can't* slip, because it has an *exclusive,* positive interlocking feature. The friction surfaces merely bring pump up to engine shaft speed. Then the interlock takes over . . . and you have unfailing positive drive. The *only* front pump that provides this *extra* safety feature is the Barton-American Type UA!

BETTER DESIGN GIVES BETTER PERFORMANCE

Other superior features include well-designed, dependable frost-proof construction that adds extra summer cooling capacity too . . . rugged, top-quality pump construction . . . fully automatic, frost-proof, engine vacuum primer . . . convenient controls . . . and dual universal joint spline-shaft power take-off.

These items, plus our *exclusive* Service Pump Plan are fully described in the Type UA Pump Bulletin.

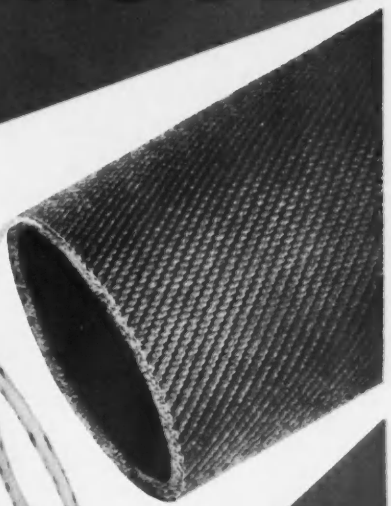
WRITE FOR YOUR COPY OF BULLETIN 8330-C.

★ AMERICAN ★
FIRE PUMP COMPANY

P.O. BOX 219-B, BATTLE CREEK, MICHIGAN, U. S. A.

Fabric FIRE HOSE

PRESENTS



FABRIC UNISPUN FIRE HOSE

WITH

WEATHERMATE PROTECTION

AND

PRES-R-LOCK COUPLINGS

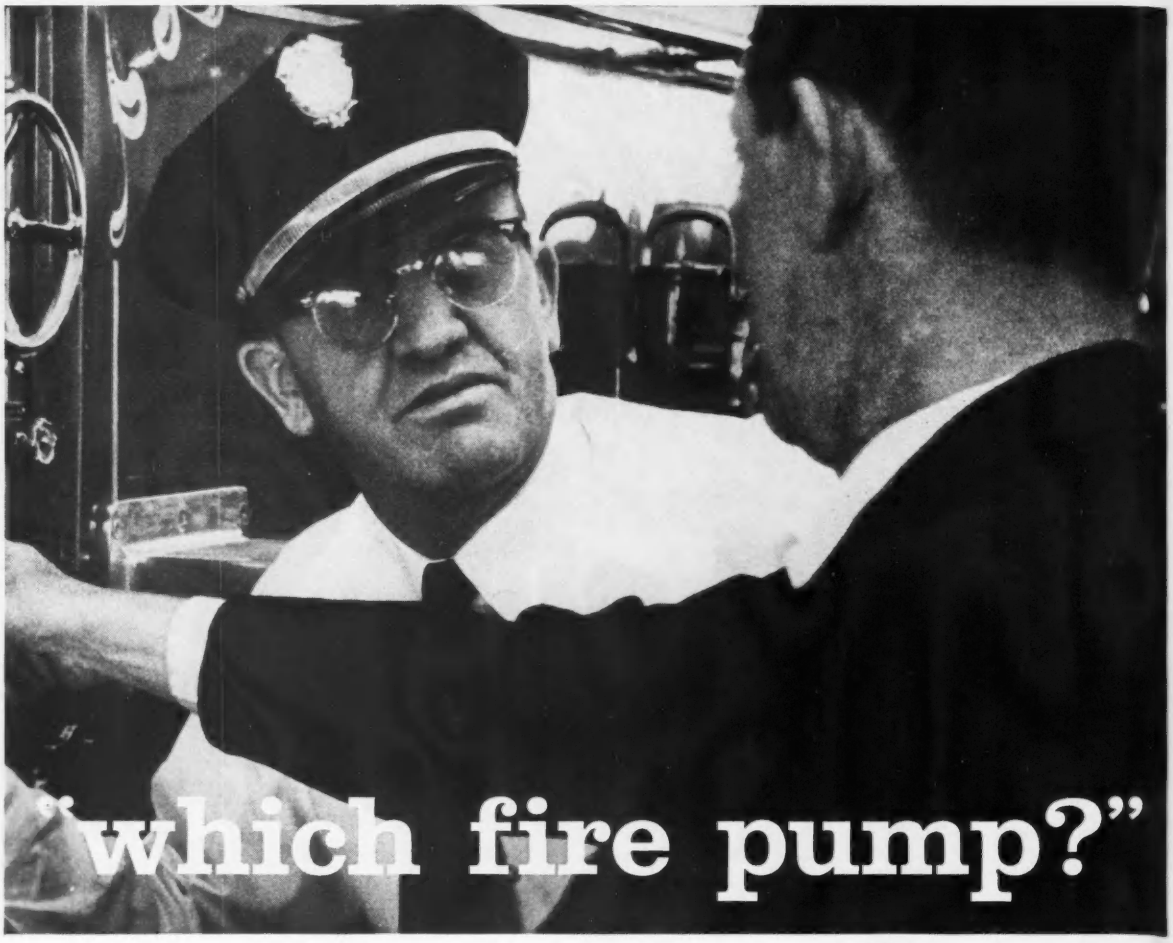
WRITE US or CONTACT YOUR Authorized FABRIC Representative

FABRIC FIRE HOSE COMPANY

EXCLUSIVE MANUFACTURER OF FIRE HOSE SINCE 1869

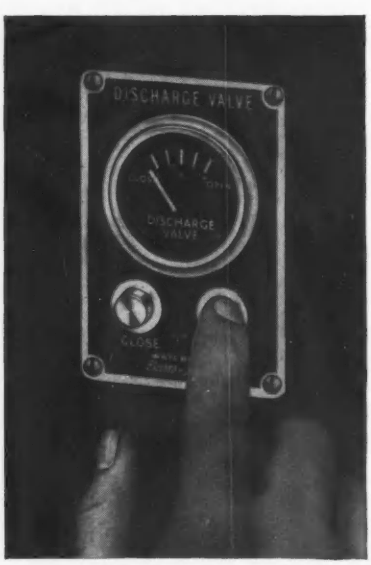
SANDY HOOK, CONN.

IN CANADA *Pierre Thibault* CANADA, LTD., LTEE., PIERREVILLE, QUEBEC



"which fire pump?"

First choice for performance—the completely power-controlled Waterous Electro-Matic*



More and more men who know fire pumps are choosing the new WATEROUS Electro-Matic. Why? Because it's modern, it's automatic, it's dependable. Push-button controls reduce error, provide greater safety. Pump is engaged at the flip of a switch; lights show whether the shift is in "road" or "pump"; the powerful primer goes into action with the push of a button; the "volume-pressure" switch controls the transfer valve and lights unmistakably tell the position of the valve. Electro-Matic gets water onto the fire quicker, with foolproof operation.

Here's the WATEROUS Electro-Matic discharge valve. Smooth operation, no sudden, dangerous pressure surges. Push the button to unlock, position, or lock. Fast, positive, dependable, it seals against both vacuum and pressure. It's another reason why more cities are choosing the Electro-Matic.

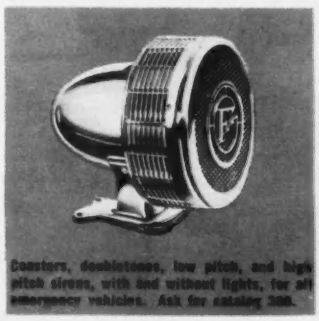
FREE BOOKLET gives complete details on *Electro-Matic* controls, design, maintenance ease and adaptability to all modern chassis. Write today for your copy.

WATEROUS *Electro-Matic*

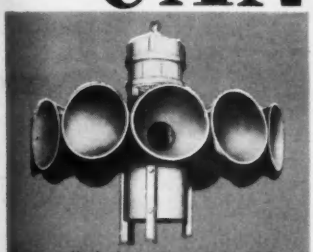
80 E. Fillmore Ave., St. Paul, Minn. - Dept. 204 *Registration applied for.

WE CAN HELP YOU! ★

360° revolving lights of all types. Regular, Super and Junior Beacons, and the Fire Bell. Ask for catalog 360.



Boosters, doubletones, low pitch, and high pitch sirens, with and without lights, for all emergency vehicles. Ask for catalog 300.



Large vertical alarm sirens, 2 to 10 horsepower for volunteer departments, disaster warning, first aid call, and other general alarm purposes. Ask for catalog 200.

Beacon Rays for visual warning at intersections and danger spots or for other alarm and warning purposes. Ask for bulletin 107.

Small stationary sirens for advance warning at dangerous intersection or outside of fire houses, or as fire alarm in public and industrial buildings. Ask for bulletin 111.

As Fire Chief you are a busy man – an expert in your profession, with problems that are many and detailed.

As experts in the field of signals for fire departments, FEDERAL can relieve you of annoying but important details. Whatever your signal problem, we can recommend and furnish equipment designed to solve that problem.

We can help you increase your department's efficiency and safety. Look at some of the items we offer. Consider their purpose and your departmental needs.

Air horn alarm systems, coding sirens, and related alarm and control cabinets, hand registers, reels, etc. Ask for code siren or air catalog.

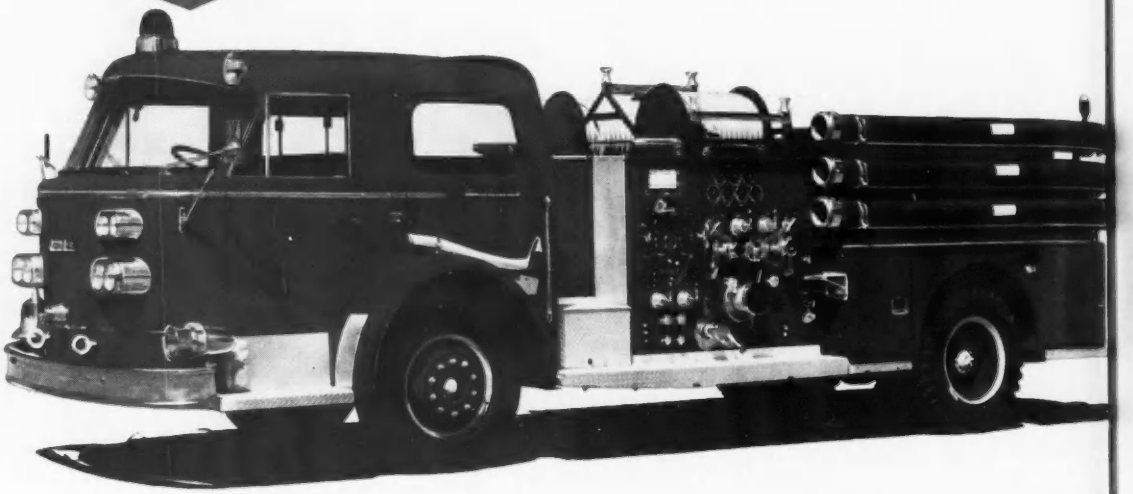
Combination electronic siren and public address units for chief's car, fire apparatus, ambulance, or police. Ask for bulletin 335.

Write us about your specific signal needs.

FEDERAL SIGN and SIGNAL Corporation

8717 S. State St.
Chicago 19, Ill.

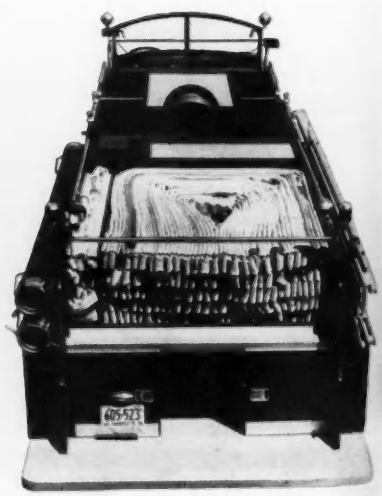
24 Important Improvements in



In American LaFrance fire engines you get all of these improvements plus many other Extra Values that make American LaFrance the outstanding value for the fire service. Space permits only a partial listing of these new and important features. See our representative or write for complete data on the new 900 Series Fire Engines.

- New wider cab — It's 71 inches inside, 76 inches outside width.
- Wrap around windshield of safety plate glass is wider and 3 inches higher for improved driver visibility and protection.
- Increase in all seat widths — roomy seating for 5 men.

• **The driver's seat** is 4-way adjustable, 4 inches fore and aft and 3 inches up and down to provide proper seating for any driver. The gear shift lever is relocated, handy for driver with no passenger interference. The hand brake lever, too, has been relocated for greater driver convenience.



• **The 900 Series** hose body shown in the above photo is loaded with 2000 feet of 2½ inch dacron-cotton hose plus 450 feet of dacron-cotton 1½ inch hose.

AMERICAN LAFRANCE

900 Series Fire Engines!

- Improved streamline appearance – hose body 4½ inches lower for easier hose loading and removal.
- Dual twin seal beam headlights for greater illumination and safety for night driving.
- Two red warning lights plus two amber directional signal lights at front.
- New chrome-manganese chassis springs for easy riding without roll on sharp turns or bounce on rough surface streets or roads.
- New chassis frame design with 10½ inch deep side members and one inch deeper cross member. Frame is rugged all welded construction for maximum strength and stiffness.
- Torque converter available in all models with any of 8 engines. No gear shifting, no clutch pedal, less maintenance.
- New 300 b.h.p. V-8 engine is added to wide range of power available to meet every fire service requirement.
- Nine compartments. Seven fully enclosed for stowing all equipment requiring weather protection. One of these compartments is ample size for 2-way radio.

In addition to these features and many more, there are Extra Value features in the Cab-Ahead-of-Engine such as short turning radius, (25 ft.). Shock absorbers both front and rear for a safer ride. Only American LaFrance offers all these features.

AMERICAN LAFRANCE CORPORATION

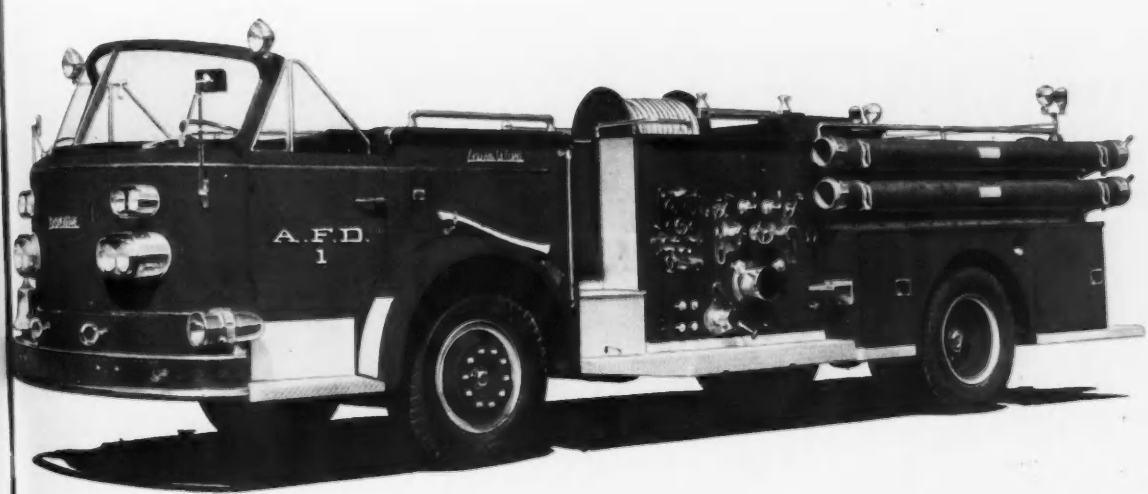
DIVISION OF STERLING PRECISION CORPORATION

ELMIRA, NEW YORK, U. S. A.

LAFRANCE FIRE ENGINE — FOAMITE LIMITED

TORONTO, 9, ONTARIO, CANADA

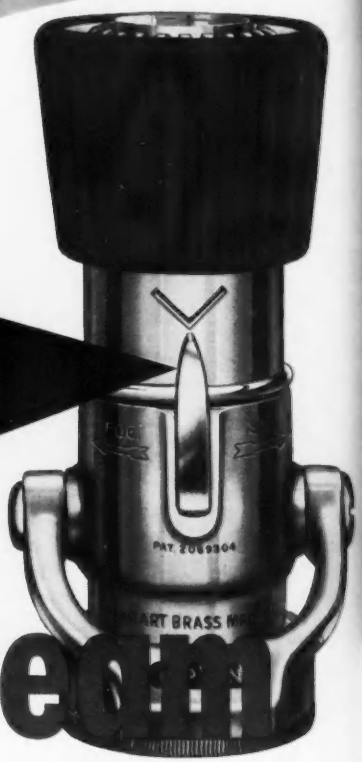
- See the new 900 Series Fire Engine at the I.A.F.C. Conference in Los Angeles.



WIDELY IMITATED!

NEVER EQUALLED!

THE BEST!



Select-O-Stream

MYSTERY NOZZLE

Developed in 1952 . . . an immediate success, SELECT-O-STREAM proved to be one of the greatest *original* developments in Elkhart's long list of fire fighting "firsts." It's a great compliment to be copied. It's stimulating to know YOU'RE RIGHT and YOU'RE FIRST. Admirably referred to as SOS, Select-O-Stream has been one of the most talked of nozzles in the history of fire fighting. Accept this sincere request: TRY, TEST, COMPARE Select-O-Stream. YOU DECIDE!

Most Important Improvement
In Six Years
to be unveiled at I.A.F.C. Convention
Don't Miss It!

★
Set to any stream without looking. You feel those embossed stream indicators.
★
Set to turn on in any position.
★
Locks to the stream you choose.
★
Separate ball type shut-off. (Brass to neoprene seat)
★
Improved grip serves as both grip and bumper.
★
Teeth that chew the fog stream. (When you set the nozzle to fog these teeth go to work.)
★
Solid knurled base—easily attached.
★
NOW AVAILABLE IN THESE SIZES: 1"—1½"—2½".

Write for complete literature

ELKHART BRASS MFG. CO., INC.
ELKHART, INDIANA
Past half a century of fire fighting progress

M-S-A CHEMOX.® Complete breathing protection in oxygen-deficient or unbreathable atmospheres. Pure oxygen, released from the replaceable chemical canister the instant the wearer breathes, continues automatically in accordance with the breathing demands. Minimum of 45 minutes' protection under rugged working conditions.

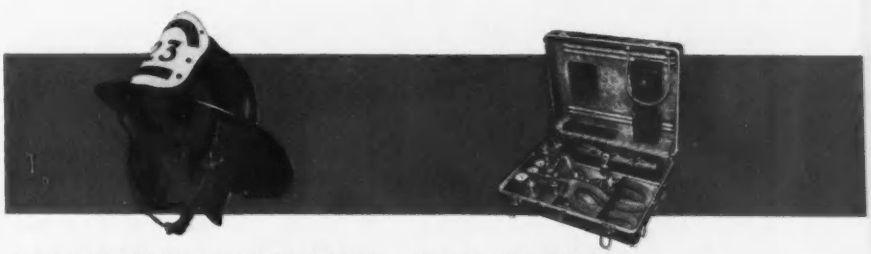
The Chemox is light—only 13½ pounds; comfortable. Canisters can be stored indefinitely—are always ready. M-S-A "Cleartone" Speaking Diaphragm, permits clear communication between mask wearers.

M-S-A AIR-MASK. Designed for respiratory protection and comfort in unbreathable atmospheres. Supplies air or oxygen in exact accordance with breathing needs. During exhalation, the flow ceases —an economy measure that greatly lengthens service life. Construction details include —large, well-defined figures on pressure gauge . . . high pressure hose made of wire-inserted neoprene . . . redesigned cylinder valve connects directly to the cylinder; provides greater service, less maintenance . . . nylon harness resists chemicals and water.

M-S-A "ALL-SERVICE" MASK.® For fire-fighting efforts in air contaminated with smoke and gas, but where sufficient oxygen is present to support life, the "All-Service" Mask assures dependable breathing protection to the wearer. Unit is designed for freedom of movement and wearing comfort. "All Vision" facepiece, combined with M-S-A "Cleartone" Speaking Diaphragm for clear speech transmittal are additional features that make this mask ideal for effective fire fighting. Each "All-Service" mask comes in a strong carrying case; ample room for extra canisters.

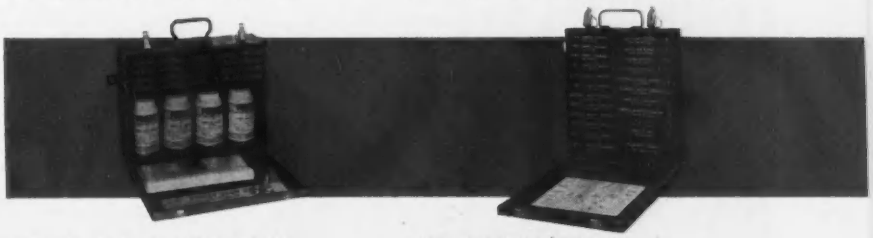
INCREASE YOUR FIRE-FIGHTING EFFICIENCY AND SAFETY WITH PROVED M-S-A® EQUIPMENT

Providing your department with the best possible equipment is a big step forward in fire-fighting speed and safety. Firemen, confident of the equipment they wear and have available in case of injury, concentrate fully on the job to be done. M-S-A products for Fire Departments are known everywhere for the confidence they give to fire-fighters. Some of our equipment is illustrated and described here. If you would like complete information, write for our Fire Department Catalog. You'll find it profitable reading.



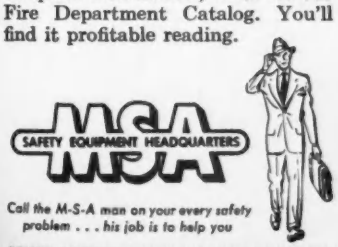
M-S-A STREAMLINED FIREMAN'S HELMET
Molded laminated plastic shell takes bumps and blows; withstands water, oil, heat; provides high dielectric strength. Streamlined design; shields are of tough, full-grained leather; zipped-in winter liner for all-weather comfort.

M-S-A PNEOLATOR
Assures maximum chances of recovery in all cases of arrested breathing. Automatically provides oxygen at preselected amount, pressure. No suction cycle—exhalation takes place by normal passive return of respiratory muscles.



M-S-A FOILLE SPRAY KIT
Four aerosol sprays for quick, effective application to burned areas. Aerosol application is fast, effective, always ready. Contains a complete assortment of first aid dressings and accessories. Weatherproof steel case.

M-S-A FIRST AID KIT
Unit packages are individually wrapped in tear-taped cellophane to protect against dirt, dust and moisture. All-weather steel case design. Treatments contained in unit packages for quick location, individual treatment.



Call the M-S-A man on your every safety problem . . . his job is to help you

MINE SAFETY APPLIANCES COMPANY
201 North Braddock Avenue, Pittsburgh 8, Pa.
At Your Service: 76 Branch Offices in the United States
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adds 5 new Mack pumpers

. . . joins the BIG-CITY swing to Macks

Behind the growing preference of major departments for Mack Fire Apparatus is a very simple fact: ***Mack dependability***

You can depend on Mack custom engineering for apparatus that most exactly meets your operational conditions, regardless of terrain or climate.

You can depend on Mack custom construction because all critical components—cabs, engines, transmissions, frames, axles, bodies—are made by Mack to the very highest of fire-fighting standards. Mack controls this quality by manufacturing more of its own product than any other maker.

You can depend on Mack performance because, before any unit leaves the great new plant at Sidney, Ohio, every individual part of every major and minor component has been exhaustively tested for flawless functioning today . . . tomorrow . . . and in the years to come.

You can have the design you want—conventional or cab forward . . . standard or automatic shift . . . gear ratios for hills, for flat terrain, or for congested areas . . . clutches, air brakes and differentials that have no equal . . . and the incomparable Mack engines. Find out why Macks have earned the reputation: "When a Mack has to roll, it rolls—immediately. When a Mack has to pump, it pumps—indefinitely." Mack Fire Apparatus, Sidney, Ohio. In Canada: Mack Trucks of Canada, Ltd.

See one of Los Angeles' new Mack pumpers at the International Association of Fire Chiefs Convention in Los Angeles.

MACK

first name for

FIRE APPARATUS

COMPLETE LINE OF PUMPERS—500 to 1250 GPM . . . SQUAD AND HOSE WAGONS . . . AERIALS 65' to 100' . . . COMBINATION LADDER TRUCKS

NEW...Lightweight...Improved...

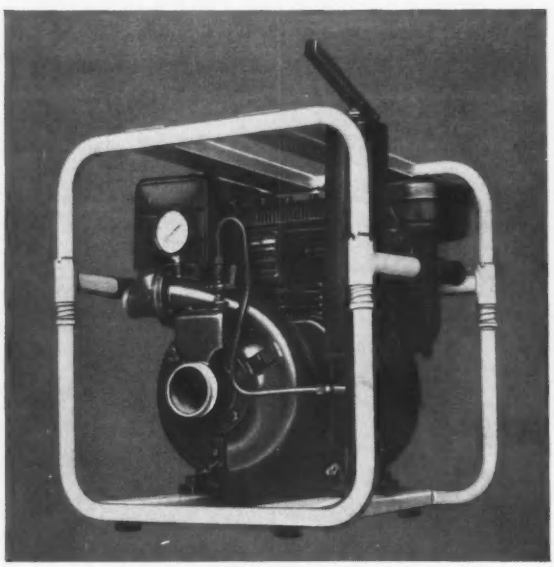
HALE Type FZZ and FZ portables

Meet the NEW Hale FZZ and FZ portable Fire Pumping Units. The famous FZZ was originated for fire-fighting by HALE . . . specialists in Fire Pumping Equipment. Often imitated but never duplicated, the FZZ and its companion unit, the FZ, are NEW in body, much lighter in weight and improved in design. Every Fire Company will find these Units "tops" in the emergency work for which each is specifically designed.

Here are just a few of the many plus features characteristic of both models

- NEW Aluminum Pump Body and Head.
- Either Unit weighs only 148 lbs., in frame.
- Available 3 ways: in frame as shown; on rubber-cushioned steel channels; or on two truck-type wheels for use in factories, mills, etc.
- Packing Gland of generous length, easily adjusted.
- Bronze Impeller mounted on Engine Crankshaft. The crankshaft is protected from corrosion and packing wear by a non-corrosive steel sleeve.
- NEW efficient Check Valve.
- Renewable Bronze Clearance Ring.
- NEW Improved Hale Ejector-Type Priming.
- Extra sturdy protective carrying frame with NEW rubber-grip handles. Handles fold out of the way in any direction, and lock in carrying positions. They also lock when folded inward as pictured.
- Painted in two attractive color tones—adds "Class" to any apparatus.

Type FZZ 2½" Suction and 1½" Discharge



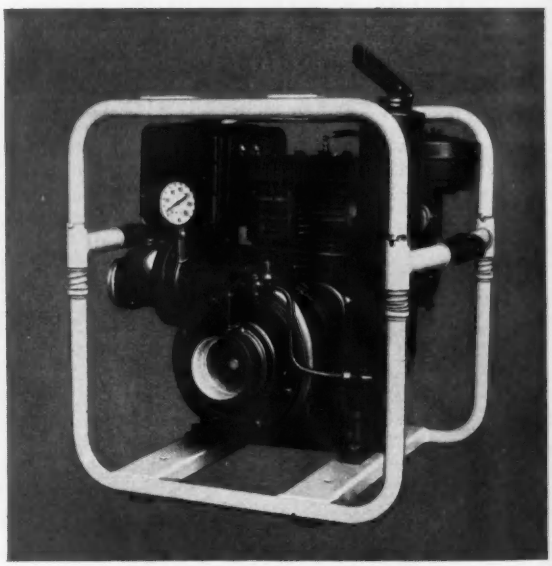
Packs a Pressure Punch!

The FZZ is best choice for a Company that frequently pumps thru a 2½" line over 350 ft. long from source of water not accessible to Major Pumper.

Supplies from Draft, on 10 ft. lift:*
60 U.S. GPM at 90 lbs.
80 U.S. GPM at 82 lbs.
100 U.S. GPM at 72 lbs.

*Based on level terrain

Type FZ 3" Suction and 2½" Discharge



Packs a Volume Punch!

The FZ is best choice for a Company that frequently pumps thru a 2½" line not over 350 ft. long from source of water not accessible to Major Pumper.

Supplies from Draft, on 10 ft. lift:*
85 U.S. GPM at 60 lbs.
150 U.S. GPM at 52 lbs.
300 U.S. GPM at 18 lbs.

*Based on level terrain

Write today for detailed information on FZZ and FZ fire

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PENNA.

Fire pumps in all standard capacities.

MIDSHIP PUMPERS ranging to 1000 GPM capacities . . . CRASH TRUCKS . . . TANKERS . . . with famous CHAMPION Pumps of 1-2-3-4 stages . . . . . available at proportionately low prices

MANUFACTURED BY

W. S. Darley & Co.

CHICAGO 12

If You Are in the Market for a NEW Truck it Will Pay You to Write Us

1908 ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ DARLEY'S 50th YEAR ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ 1958

For a Well Balanced Fire Prevention Program

YOU NEED

INDIAN

FIRE PUMPS

Fire fighters call them a "ONE MAN FIRE DEPARTMENT"

Round out your equipment with an ample supply of **INDIANS** "the pump of 100 uses." Here's what Fire Chief G. P. [illegible] about them:

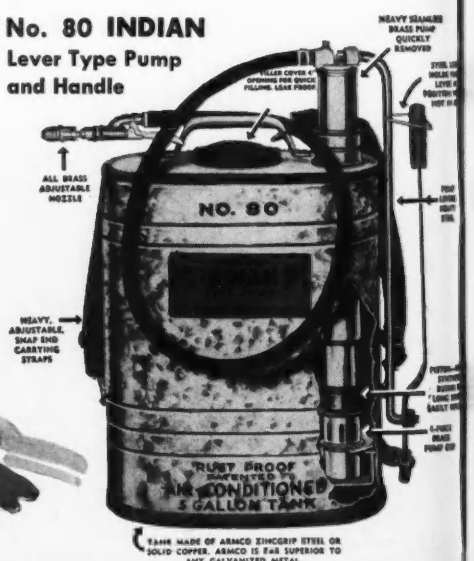
"I once thought **INDIAN FIRE PUMPS** had use only for putting out grass fires. Since buying a number of No. 90 solid brass tank **INDIANS**, however, and including them on our apparatus I found *the men would not use any other type of extinguisher.* We prefer them to any other hand extinguisher for *all Class A fires* and small oil fires."

No. 90 INDIAN
Sliding Pump Type

All seams of 5 gal. tank electric welded, no leakage. Curvature of tank fits back comfortably. Adjustable carrying straps. Pump throws 30 ft. pressure stream or nozzle switches for spray. Sturdily built for long service.

Both Types Approved by Underwriters' Laboratories, Inc.

No. 80 INDIAN
Lever Type Pump and Handle


HEAVY SEAMLESS BRASS PUMP QUICKLY REMOVED
ALL BRASS ADJUSTABLE NOZZLE
NO. 80
HEAVY, ADJUSTABLE, SNAP END CARRYING STRAPS
RUST PROOF PROTECTED AIR CONDITIONED 5 GALLON TANK
TANK MADE OF ARMCO ZINCGRIP STEEL OR SOLID COPPER. ARMCO IS FAR SUPERIOR TO ANY GALVANIZED METAL.

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GASOLINE PROBLEM?

MAXIM has a practical and simple answer that you should investigate. Write:

MAXIM MOTOR COMPANY

MIDDLEBORO, MASSACHUSETTS

What fire fighters are reading . . .

Here are the most popular books and pamphlets now being ordered by fire fighters from the NFPA. If you want some for your fire station library or for yourself, you can order simply by checking the appropriate boxes, filling out the blank below and mailing this page to the NFPA Publications Department.

☐ **Respiratory Hazards of the Fire Service**

In this book Dr. William D. Claudy describes respiratory hazards that confront fire fighters. Well-illustrated, about one-third of the book is devoted to the construction, use and maintenance of canister and self-contained masks. Other sections deal with smoke inhalation, lack of oxygen, toxic gases. fire fighting procedures and numerous other facts important to a fire fighter's well-being.

Cloth bound, 5¾ x 8⅝ inches, 140 pages, illustrated **$4.25 per copy**

☐ **Attacking and Extinguishing Interior Fires**

Gives sound theories on using water fog for fire fighting. Covers behavior of interior fires, equipment to use and indirect method of attack.

Cloth bound, 134 pages, illustrated **$3.75 per copy**

☐ **Fire Fighting Tactics**

An excellent supplement to "Attacking and Extinguishing Interior Fires." Has case histories of successful fire attack with water fog, and suggests operational planning procedures and tactics. A "must" reading for the fire officer on the way up!

Cloth bound, 134 pages, illustrated **$3.75 per copy**

☐ **Fire Protection for Chemicals**

Practical summary of things fire fighters should know when dangerous chemicals are involved or threatened by fire. Detailed attention given to fire fighting procedures for the many chemicals listed in this volume.

Cloth bound, 152 pages **$3.00 per copy**

☐ **Handling Hose and Ladders**

A pictorial book showing recommended procedures for handling hose and ladders on the fireground. Simple step-by-step sequences provide a good training aid for fire department instructors.

Cloth bound, 190 pages, illustrated **$2.50 per copy**

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☐ **NFPA Standard No. 403**

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Paper bound, 36 pages **$1.00 per copy**

☐ **NFPA Standard No. 406**

"Aircraft Rescue and Fire Fighting Techniques for Municipal and Rural Fire Departments."

Paper bound, 16 pages **35 cents per copy**

Memo to:

ALL FIRE CHIEFS

We want you to read this special issue of FIREMEN from cover to cover. Then think for a few minutes about how much it would mean to your men if they could get this informative magazine each month of the year.

FIREMEN magazine is prepared especially for the interests of fire fighters, although many engineers and other technical specialists subscribe to it regularly. You can get this popular monthly magazine simply by taking membership in the National Fire Protection Association for yourself or your fire department.

If you do so, and you are the chief of a paid, call or volunteer municipal fire department, you can order four (4) yearly subscriptions at no extra charge. Extra subscriptions cost only $2.00 each per year. Membership dues in this Association are only $15 per year and you will receive a beautiful membership certificate that you will be proud to display in your headquarters, plus subscriptions to the NFPA *Quarterly* and the monthly *Fire News*. You will also get other NFPA materials such as Spring Clean-Up and Fire Prevention posters, folders and suggested news, radio and TV releases.

Primarily, though, the membership will serve the officers and men of your fire department. NFPA publications should be in every fire station library, as you will agree if you look over the partial listing on the opposite page. They will stimulate the interests of your men in better methods of fire combat, in thorough training, and in sound principles of fire department operation and administration.

Want to try NFPA membership?
Just fill out and mail the blank below

National Fire Protection Association
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Boston 10, Massachusetts

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FIREMEN

Volume 25 • Number 9

A monthly magazine published for the fire service members of the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

Warren Y. Kimball *Editor*

Paul R. Lyons *Associate Editor*

Henry S. Gere *Advertising Manager*

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"Man the Brakes!" might well be the title of this month's cover picture, for this exceptional photo was taken during a firemen's muster. Perhaps nowhere, other than at a muster, is there a better example of the excitement and colorful action that were an intrinsic part of fire fighting a century ago. The men in this picture are putting forth their full strength at top speed, just as hand tubs were manned in the old days. The results of their efforts are shown on page 36.

Lately there has been an increasing interest and participation in these musters and the glamor, competition and excitement grows in proportion. Maybe you, too, can take part in one soon. You'll like it!

The fastest growing segment of NFPA membership comes from the fire service. Of our present 17,000 members, approximately one-third come from this group. This means that well over 5,000 fire departments or officers of fire departments belong to and support the work of the National Fire Protection Association.

An analysis of our membership in the larger fire departments is of interest. In only three out of the 109 cities of over 100,000 population in the United States are there no NFPA memberships in the fire department. These three cities are Allentown and Scranton, Pennsylvania and Evansville, Indiana. There are NFPA memberships in the fire departments of 118 out of the 133 cities of population between 50,000 and 100,000.

A growing number of cities have recognized the value of providing NFPA information and literature to all their fire officers and fire fighters. These cities have taken out memberships for every fire station, thus giving every man in the department opportunity to have readily available for study a reference library of NFPA literature. Cities now providing such memberships for every fire station are Bakersfield, Calif.; Berkeley, Calif.; Boston, Mass.; Dallas, Texas; Davenport, Iowa; Des Moines, Iowa; Hartford, Conn.; Houston, Texas; Honolulu; Los Angeles County; Memphis, Tenn.; Montgomery, Ala.; Providence, R. I.; and Rockford, Ill.

Our membership support in the very largest fire departments indicates a rather mixed situation. In the fire departments in New York and Los Angeles, for instance, nearly one hundred individuals in each case hold personal memberships in the NFPA, but in some of the other larger cities such as Detroit, Cleveland, Pittsburgh and St. Louis, there are only two or three individual NFPA memberships in the entire department.

In general, it can be said that in the smaller departments the membership is usually in the name of the department itself or in the name of the chief. In the larger cities, in addition to such memberships, the chief of the Fire Prevention Bureau and the chief training officer of the department are likely to be members.

In Canada, we also enjoy strong fire department support. The fire departments of all of the principal cities of Canada belong to NFPA and we have a growing number of the smaller fire departments throughout the entire Dominion of Canada enrolling as members.

Logically, because of the rapidly growing membership that NFPA has from the fire service, we are devoting an increasing amount of time and attention to the problems of the fire service and to filling the demands for information desired by the fire service. The Fire Service Department at NFPA headquarters in Boston answers hundreds of inquiries from fire departments. A whole library of books of special interest to the fire service has been developed by this department and many additional books are on the schedule for future publication.

WHERE WERE YOU THEN?

IN ITS 25-year history, FIREMEN magazine has always been prepared for the interests of the fire service. A major one of these interests is fire — why it happens, what it can do and how it can be stopped.

Through the years the editors have attempted to give answers to the national fire problem by writing analyses of significant fires or by publishing reports of fire chiefs, fire marshals and other members of the National Fire Protection Association. That there was, and still is, demand for such information is shown by NFPA General Manager Percy Bugbee whose article appears on the opposite page.

In preparing this special issue for circulation to every fire department in the United States, the editors studied each issue since the first appeared in 1933. It was thought that a summary of the major feature stories might bring back memories for the readers, some of whom undoubtedly played important roles in the reported incidents.

Regrettably, the picture created by such a summary is not pretty. For the most part it is a story of the waste, death and destruction caused by fire. It also touches upon the many difficult and terrifying incidents that had to be handled by fire departments, large and small, paid and volunteer.

In reading this summary, it seems to us that man's efforts against fire still remain rather puny. The frequency and seriousness of fire tragedy and destruction remain with us despite our advances in fire protection and in the design of equipment to combat fire. Still, this 25-year summary points up one other thing — we *have* learned a great many lessons in this short period of time.

THE EDITORS.

VOLUME 1 — 1933-34

September issue — First issue of *Volunteer Firemen* appears with Horatio Bond (now NFPA Chief Engineer) as editor — Ellsworth, Maine. $1,350,000 conflagration fought by ten communities. Almost all fire fighters volunteers. Fire started in an old two-story frame building. . . . *October issue* — Off the New Jersey coast. Liner *Morro Castle* burns in gale, 137 persons dead or missing. Fire started in locker of writing room on portside, spread quickly through open stairways from deck to deck of the $5,500,000 liner.

VOLUME 2 — 1935

August issue — First picture ever obtained of entire NFPA Board of Directors and officers of Association. . . . *October issue* — New York State. Summer cloudburst hits 7,500 square mile area in central New York State, 14-in. rainfall, two-day flood with 53 dead, $25,000,000 loss. Fire protection maintained with great difficulty. . . . *December issue* — Weston, West Virginia. By careful advance planning, volunteer fire fighters manage to evacuate 1,600 patients from the Weston State Hospital for the Insane. 115 firemen take part in mutual aid operations.

VOLUME 3 — 1936

January issue — NFPA completes 40 years of service as a clearinghouse for authoritative information on fire protection. . . . *February issue* — Report on conflagrations in Los Angeles County, California, which burned 34,000 woodland acres, 222 buildings and threatened whole cities. . . . *July issue* — Flying brands from wood shingled roofs carried fire for nearly a mile on Peak's Island, Maine, to involve other wood shingled roofs. 35 buildings burned, 18 totally destroyed in summer resort area.

VOLUME 4 — 1937

January issue — Coal mine fire started in 1884 still burning. Involves 18 square miles in Hocking and Perry Counties, Ohio. Some persons estimate that it will burn for a century. . . . *May issue* — London, Texas. Gas from improperly installed heaters explodes while school is in session killing 294 of 350 people in the school building. . . . *June issue* — Lakehurst, New Jersey. Hydrogen-filled German zeppelin "Hindenburg" explodes while landing. 37 of 109 people die as incident marks end of zeppelin era.

VOLUME 5 — 1938

March issue — St. Hyacinthe, Quebec. 41 students and 5 priests in Sacred Heart College die as coal gas explosion rips through building. . . . *July issue* — Atlanta, Georgia. Greatest hotel tragedy in 40 years strikes Atlanta hotel as 35 die when fire involves five-story combustible building. . . . *September issue* — Wellsville, New York. $1,000,000 loss in Sinclair Refinery brings 200 volunteer fire fighters from 22 towns. Flaming tank catapults 500 feet across Genesee River and kills three spectators. . . . *November issue* — New England. Hurricane in late September smashes through New England states leading to 500 deaths and in New London, Connecticut, a $1,000,000 fire loss that involves 50 buildings.

VOLUME 6 — 1939

June issue — Stillwater, Oklahoma. First college class in firemanship is given at new Oklahoma A & M School of Technical Training. . . . *July issue* — Chicago, Illinois. Tremendous grain elevator fire brings one of the largest concentrations of fire fighting equipment. 9 killed in explosion and eventual $3,000,000 damage; one of the largest losses in U. S. since Chicago stockyards burned in 1934. . . . *August issue* — Percy Bugbee becomes general manager of NFPA, succeeding Franklin Wentworth.

VOLUME 7 — 1940

April issue — Albany, Georgia. Hit by tornado that kills 18 people and injures 400. Fire department bears brunt of rescue work and puts out patrols to prevent fires following disaster. . . . *June issue* — Natchez, Mississippi. 207 die in dance hall; 200 injured. Since start of 20th century only six fires have taken greater life toll. . . . *July issue* — Brawley, California. City hall and fire headquarters collapse in Imperial Valley earthquake disaster. Two fires start, water supply systems in several communities affected. Earthquake shock tests design of elevated steel tanks.

VOLUME 8 — 1941

April issue — National Board of Fire Underwriters celebrates 75th anniversary ending in two-day meeting in New York City. . . . *May issue* — Study shows that 13 states have enacted model state fireworks law based on NFPA model law. . . . *November issue* — Fall River, Massachusetts. Biggest fire since World War I destroys over 15,000 tons of U. S. Government-owned crude rubber at Firestone plant. Largest fire in America since Salem, Massachusetts, was destroyed in 1914. One tenth of U. S. wartime stock of crude rubber wiped out with estimated $13,000,000 loss.

VOLUME 9 — 1942

Start of World War II brings accent on Civil Defense. . . . *February issue* — Report from Fire Chief W. W. Blaisdell describes handling of fires set by Japanese bombing attack. His advice to fire chiefs in other cities: "Prepare for the worst and insist on getting enough equipment to handle the biggest fire in the most hazardous districts of their cities." . . . *March issue* — $60,000,000 luxury liner *Normandie* being converted into a troopship burns at her North River berth in New York harbor.

VOLUME 10 — 1943

January issue — Boston, Massachusetts. 488 die in Coconut Grove night club fire. Inadequate and locked exits and quick-burning decorations major factors. . . . Warren Y. Kimball becomes editor of *Volunteer Firemen*. . . . *April issue* — Evansville, Indiana. 1,200 mental patients led to safety from severe fire that destroys the Evansville State Hospital for the Insane; despite limited water supply the fire department also does excellent job in protecting exposures.

VOLUME 11 — 1944

March issue — Underwriters' Laboratories, Inc., of Chicago, Ill., celebrates completion of 50 years of service. Organization began after the World's Fair in Chicago and the Columbian Exposition of 1893. . . . *May issue* — San Francisco, California. 22 persons die, 29 injured as fire strikes New Amsterdam Hotel bringing that city's worst loss of life since earthquake of 1906. . . . *August issue* — Hartford, Connecticut. Worst fire tragedy in American circus history occurs when fire involves circus tent twenty minutes after matinee starts. 163 die; 200 injured. Tent had no flameproofing; had been processed with paraffin applied with gasoline.

VOLUME 12 — 1945

March issue — Auburn, Maine. Attendants fail to call fire department and 16 babies and a nurse die in Lacost Baby Home fire. . . . *September issue* — B-25 bomber smashes into Empire State Building in New York City, ripping hole 18 by 20 feet in exterior wall 78th and 79th floors. Flames reach to observatory on 86th floor. 13 dead, 26 injured. $500,000 building loss. . . . Due to wartime emergency, 49th NFPA Annual Meeting is called off.

VOLUME 13 — 1946

January issue — *Volunteer Firemen* becomes FIREMEN magazine. 50th NFPA Annual Meeting in Boston, Massachusetts. . . . *May issue* — General Manager Percy Bugbee receives Navy Achievement Award "in recognition of exceptional accomplishment in behalf of the United States Navy and of meritorious contribution to the national war effort." . . . *July issue* — Chicago, Illinois. 61 die as fire involves LaSalle Hotel with 2/3rd of fatalities caused by occupants jumping from windows or attempting to escape through flame-swept corridors.

(Continued on page 49)

25 YEARS OF GROWTH!

by Percy Bugbee, General Manager, National Fire Protection Association

WITH this issue, FIREMEN magazine completes 25 years of continuous publication. It seems appropriate at a Silver Anniversary to look back over the years and review its history and development.

FIREMEN magazine started under the title of *Volunteer Firemen* in October, 1933. The first issue was printed in one color and was only 12 pages. In 1933 the country was still in the throes of the major depression which started late in 1929, and I recall very clearly the serious misgivings that the Board of Directors of the National Fire Protection Association had when we proposed the launching of a new national publication designed to provide interesting and useful information for the volunteer fire service of the United States and Canada. Our staff, however, was so convinced of the worthwhileness of developing regular and effective contact through a publication to reach this field that we were permitted to make the attempt.

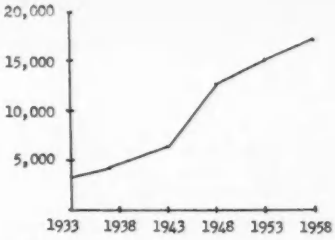


Fig. 2. Growth of NFPA membership in 25 years.

At that time we had no real conception of the extent of the volunteer fire service in the United States and Canada, nor of the reception that a publication of this type might receive, but we printed and sent out a few thousand copies of Volume I, No. 1, of *Volunteer Firemen* with the hope that it would be well received. As might have been expected, the appearance of the publication was greeted enthusiastically by a small nucleus of the aggressive and interested volunteer fire departments in various sections of the continent.

Figure 1 shows the growth of the circulation of FIREMEN magazine over the 25-year period. It is very gratifying that we presently have the highest total circulation in the history of the publication in spite of several reductions in the number of copies offered at no extra charge to NFPA member fire departments and several increases in the cost of membership and extra subscriptions. This testifies to the soundness of the policy and the acceptance of the publication by the fire service.

Fig. 1. Growth of circulation of FIREMEN magazine from 1933 to 1958.

Twenty-five years ago, although the NFPA was then 37 years old, it was still a comparatively small Association. In 1933 the total membership of NFPA was only 3,300. Figure 2 shows the membership growth of the Association and a present membership that is more than five times as large as in 1933.

Another and perhaps even more impressive indication of the growth and influence of NFPA is well illustrated in Figure 3 which shows the distribution of NFPA literature of all sorts. In 1933 we distributed 600,000 pieces of literature from our headquarters office in Boston. In the past year we distributed over 9,000,000 pieces of literature, an increase of 1,500 percent in 25 years.

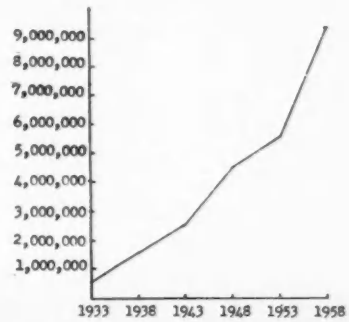


Fig. 3. Distribution of fire protection and fire prevention literature in 25-year period.

Still another index of growth is indicated in Figure 4 which shows the total income of the Association and its growth over the 25-year period. Here again we have an increase of more than tenfold.

Probably the most satisfying aspect of this very marked growth of the Association and its activities during the 25 years is the evidence of a wider and more comprehensive acceptance of the importance of fire protection and prevention.

With this record of growth and this evidence of an increasing public awareness of fire waste it seems to me that we can look forward with confidence to performing an ever-increasing service to the end that each year will bring evidence of a more effective effort to reduce the still too tragic loss of life and destruction of property by fire.

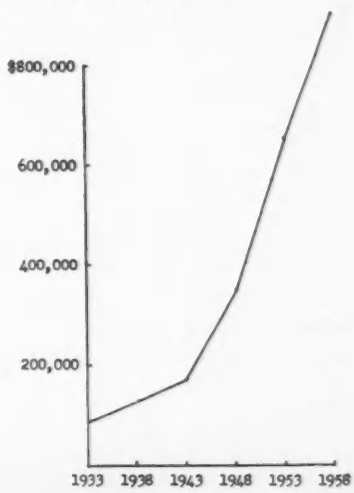


Fig. 4. Dollar income of Association during same period.

CHIEF . . . BEWARE OF HOME FIRE SAFETY RACKETEERS!

by George H. Tryon, III, NFPA Assistant Technical Secretary

A FLOCK of vultures is preying on mankind's fear of fire!

These birds of prey are swarming over the countryside looking for the quick buck, selling a false sense of security with horror pictures and glib tongues. Many are marketing dangerous devices — some more likely to start a fire than to give a warning and others more likely to spread a fire than to extinguish it.

Fire chiefs must be alert to these gyp artists and take action to halt their racketeering in the name of fire safety!

In many cases, these bell-pushing sharpies claim that they are representatives of the NFPA or the local fire department. They also frequently distribute NFPA or NBFU literature. They are attempting to capitalize on the current practice of fire department home inspections to misrepresent and conceal their real intent.

Their sales technique usually is first to shock the housewife with horror pictures of burned bodies (particularly children) and scare headlines, followed by glib and convincing sales pitches, complete with demonstrations on how their product can keep the home safe from fire. Some are reported to use a "referral" cost reduction scheme offering ten dollars for references to friends who would be customers. This technique works in various ways; it may be a legitimate advertising scheme or it may be fraudulent.

Tragically and ironically, properly designed and installed fire safety equipment for the home could serve most effectively to reduce markedly the fire deaths and injuries which plague us.

Worst Rackets in Home Alarms and Extinguishers

Right now, the worst rackets involve the sale of home fire detection equipment and home fire extinguishers. Actually, many of these substandard fire detection devices and extinguishers are worse than no protection at all. They not only give a false sense of security, but many of the devices are unreliable and some of the electrically operated units are actually fire hazards in themselves for lack of compliance with sound electrical construction safeguards.

Tragically, some chiefs are being "sucked in" by the worthy principles of automatic detection and the value of home fire extinguishers and are writing testimonial letters lauding these devices. In other cases, fraternal and charitable organizations act as willing, if misguided, sponsors for such sales. The "mark-up" on most of the devices is usually such as to make them "naturals" for money raising purposes. In some communities, even the YMCA's, Boy Scout organizations, the Elks and similar fraternal organizations are being "used" by these purveyors of false protection. There is no evil intent on the part of the chiefs or these charitable organizations to sponsor such substandard devices; they just do not fully understand the limitations of the equipment.

The NFPA cannot singlehandedly stop these rackets. It has called fraudulent advertising practices to the attention of the Federal Trade Commission. Several complaints have been issued by the FTC. The NFPA has also alerted the National Better Business Bureau to these operations and the Bureau has issued a pamphlet entitled, "Facts about Home Fire Protection" which warns home owners of these rackets and others affecting home fire safety (copies of the booklet can be secured for 10 cents from your local Better Business Bureau or from the Boston Better Business Bureau, 52 Chauncy Street, Boston 11. Copies were distributed to NFPA members with the August-September 1957 *Fire News*).

In addition to these steps, the NFPA has issued repeated warnings of these rackets, resulting in scores of newspaper releases on the subject. At the 1956 NFPA Annual Meeting, Chief E. N. Montgomery of the Boston Fire Department called attention to the threat of what he called the "Gyppo" extinguisher. He noted that sometimes even firemen, who should know better, are misled by the demonstration fires which salesmen of these devices use to sell their products. His remarks, entitled "What's Wrong with Fire Extinguishers?" appeared in the July 1956 NFPA *Quarterly*.

Fire Chiefs Have Major Responsibility

The real burden for policing these rackets falls on the fire chief and I appeal to you not to shrink from your duty in this connection. Your job will not be an easy one because many of the individuals who are marketing these devices are not only clever salesmen, but are of the crusading type of fire buffs, who are convinced in their own minds, that the devices which they are trying to sell are, in fact, the world's finest.

Your first question will probably be, how do I stop them? It isn't easy, but here are some things you can do:

1. Issue a series of press releases to your local newspaper telling your citizens:

   a. That the Blank Fire Department does not "approve" of any particular manufacturer's device. The Blank Fire Depart-

ment recommends and home owners should insist on proof that any device offered to them is labelled by the Underwriters' Laboratories or the Factory Mutual Laboratories for their own protection. They should be told that devices that have been tested by either of these two nationally recognized fire testing laboratories have a label on each device with the initials "UL"* or "FM." Your release should stress that thoughtful, experienced fire chiefs and top fire protection engineers demand UL or FM testing as assurance that the equipment is reliable for public protection, will perform the function for which it is designed and will not, in itself, create a fire hazard.

b. That the Blank Fire Department does not authorize the use of its name by any individual to sell fire detection equipment or extinguishers. Home owners receiving such calls should report the facts to the fire department after getting the name and address of the caller. You may desire to advise home owners to check with the Blank Fire Department before buying or making a down payment on such equipment.

c. That the Blank Fire Department does not permit firemen to sell these devices and anyone representing himself as being from the fire department should be immediately reported. (Some operators offer cash awards to fire departments for every system sold in the community. This sort of practice should be prohibited even for the UL or FM labelled devices.)

d. That neither the National Fire Protection Association nor the National Board of Fire Underwriters authorizes any individual to use their names as their representatives for the purpose of making a home inspection or selling fire alarm or extinguishing devices.

2. Contact the charitable organizations in your community, advising them that a number of firms are offering as a money raising gimmick fire detection equipment and fire extinguishers for home use and advise them that prior to their entering into any such program, they should check with you to determine the suitability of the device for general public use. If you need help or information contact NFPA, 60 Batterymarch Street, Boston 10, Massachusetts.

3. Distribute, during your home inspections, the booklet issued by the Better Business Bureau, "Facts about Home Fire Protection." This impartial, simple pamphlet is available for bulk distribution at very reasonable costs (1,000–2,999 copies —5 cents each; 3,000–11,999 copies — 4¾ cents each; over 12,000 copies — 4½ cents each).

4. Use your municipal laws (where available) to enforce the proper conduct of the sales of fire protection equipment within your community. The method of accomplishing this will vary from city to city, but advice can undoubtedly be secured from the Legal Department of your community on how this might be properly effected. As an illustration, in one city recently, the salesmen of an unapproved device, who represented themselves as being from the National Fire Protection Association, were arrested for violation of a municipal code because they were conducting a business without a valid business license, operating without the required $1,000 surety bond and soliciting without the required identification card. In this case the men involved were not able to raise $250 bail, so spent the night in custody, pleaded guilty in court the next morning and were fined a total of $120.00. Such enforcement of municipal codes will have a salutary effect on reducing the fraudulent activities of such gyp artists. Any publicity given to such arrests should discourage others from attempting similar activities.

5. Be careful about writing letters of endorsement of any particular manufacturer's product even though you may consider it harmless. Many of these operators will reproduce your letters and flash your letterhead in the face of the home owner to give credence to his claims for the fire department's endorsement. Oftentimes, the home owner is not even given the opportunity of reading the letter *in toto*, but is just shown the letterhead of the fire department.

*ULC in Canada.

Types of "Unapproved" Detectors

You would probably like to know a few of the types of "unapproved" detectors which are being offered for home use. None of the types discussed in the following brief paragraphs has been listed by the nationally recognized fire testing laboratories. It is vital that emergency devices (with which people cannot become familiar by regular usage) be tested by competent and disinterested authorities and such label services are available at very reasonable costs.

Flashlight Battery Operated Buzzers. This is the most common type on the market. They usually consist of two flashlight batteries which will operate a buzzer when a bimetallic strip makes a contact. The reliability of these devices is dependent upon the heating of this metallic strip, the life of the flashlight batteries and the sound intensity of the buzzer. Some of these units are rather attractively packaged, but no test data has been presented indicating the operating temperatures for the devices, the linear spacing between units to protect a given area or any decibel rating of the buzzer.

Spring-Wound Devices. This is the second most prevalent type of device which are not now "approved" by any of the recognized fire testing laboratories. Some years ago, the Underwriters' Laboratories did list one manufacturer's unit, but this listing has now been withdrawn. The samples we have seen consist of small bells up to about three inches in diameter with a striker designed to operate the bell when a fusible link melts to permit the spring to release. Some of the units have a

During the recent NFPA Annual Meeting in Chicago, Illinois, a reporter from the Chicago *American* tested a typical "beer can fire extinguisher" purchased for $1.74 at a local hardware store. The extinguisher label stated that it was "for all types of fires including electrical, oil and grease." Pictures above and at right show what happened when reporter tested the extinguisher. He started a fire in paper held in a cardboard box. He then discharged the extinguisher on the small blaze (second photo) with no effect. He finally put out the small fire with a pump extinguisher containing only water.

visual tab which will indicate whether the spring is properly under tension.

Again, no authoritative data is available on the suitability of the fusible element, its melting temperature, the spacing between units or the sound intensity of the bell. One such device which was informally tested with a match in our office resulted in the fusible element jamming the striker to prevent its proper operation.

Electrical Plug-in Type. Quite a few hardware stores and household suppliers are advocating electrical plug-in fire alarms which they claim to be satisfactory for installation in any household electrical outlet. Usually the advertisements show these devices mounted near the ceiling where no electrical outlets are normally located. No such devices are currently listed by either the Underwriters' Laboratories or the Factory Mutual Laboratories and, lacking such listings, it is impossible to know whether these units are safely designed for installation in a home or even whether they might be the source of an electrical failure which could cause a fire. No data is given as to the desirable location of these plug-in type units; without laboratory test data there is no indication of what temperatures will operate the unit and most of the plug-in units have merely a buzzer integral with the unit so that there is no assurance that its operation in one room will be heard in other parts of the house. It may not have sufficient sound intensity.

Aerosol Alarms. Whistles mounted on top of small aerosol cans are being sold as fire alarms. Some of these devices sell for less than $5.00 and the instructions indicate that you are to hang a number of these devices in the home to get "an ideal, low cost, permanent fire alarm system." Again, these units are of unknown reliability as there is no data to determine whether or not a particular can retains its pressure operating medium so that it will function for the purpose for which it is designed, assuming that the design does incorporate some kind of a reliable heat sensitive element. There are UL listed compressed gas unit alarms which have been carefully engineered and are most satisfactory when installed in accordance with the listing and maintained as recommended by the manufacturer.

Other Types. Quite a few individually unique devices have been designed and are offered for sale as home fire detectors. Some of these produce a shotgun type of noise not unlike a mild automobile backfire. Others involve placing detection elements in ceiling and lamp fixtures which will short-circuit the house wiring and actuate a relay in a special fuse in the fuse box to ring an alarm. Some of these so-called home fire alarm systems are also advertised as providing automatic short circuit supervision over the wiring and others are advertised as being dual purpose units, that is, they also are supposed to detect intruders or burglars.

Types of "Unapproved" Extinguishers

In the extinguisher field there are a host of "beer can" type extinguishers employing various rather well-known fire extinguishing agents including dry chemical, carbon tetrachloride and chlorobromomethane. Many of these "beer can" devices do not indicate on the label exactly what is contained in the can, but since considerable publicity has been given to the toxicity of carbon tetrachloride, some of these devices merely advertise "Does Not Contain Carbon Tetrachloride." Most are single shot, stored pressure (aerosol) type units. Some contain about 12 to 16 ounces of dry chemical and others less than a pint of liquid. They are priced anywhere from 95 cents to $7.98 depending on the size and the attractiveness of the container. Most of the distributors advertise that the units are for all purposes and urge home owners to place them throughout the house and one device even states on its label that the extinguisher will protect fireplaces.

Some other "unapproved" extinguishers are not in the conventional "beer can" type of aerosol, but are pressurized cylinders containing from 8 to 10 ounces of liquid. Some specialty stores are offering these small capacity vaporizing liquid extinguishers in handsome containers. Another type of "unapproved" unit consists merely of a plastic squeeze bottle which will discharge a fine stream of dry chemical 6 or 8 feet. None of these devices have listings by any of the nationally recognized fire testing laboratories, but informal tests with some of them clearly demonstrate that they are hazardous for the home owner to use in that their range is poor, the distribution of the agent ineffectual and the quantity inadequate to control many fires which an approved type of extinguisher could handle with great ease. In some tests with these devices, the fires have been spread rather than extinguished and the absence of restrictions on the use of these devices on various types of fires is enough to condemn them.

The fire extinguisher industry has been working with the Underwriters' Laboratories in recent months to develop an "approved" type of home fire extinguisher. At least two manufacturers now offer these extinguishers bearing an Underwriters' Laboratories label. This development will permit fire departments to advocate more strongly than they have in the past the use in the home of listed extinguishers and these units are available at lower costs than other types of approved extinguishers.

Every fire fighter should know that all extinguishers have limitations. There can be a vast difference between the way a trained salesman can demonstrate his own extinguisher and the way an untrained, excited home owner might wield the same device. The labelling system of the Underwriters' Laboratories recognizes such differences and the rating given to the approved extinguishers indicates the capability of the device in the hands of an untrained person.

Help Back this NFPA Attack

I appeal to you not only to back the attack that the NFPA is conducting on the gyp artists in the business but also to back our continuing efforts to educate the public as to the advisability of purchasing home extinguishers with care and with particular attention to whether or not the devices have been thoroughly tested and approved. The most reliable indication of the latter safeguard is the presence or absence of a UL or FM label on the devices. Only through the cooperation of the fire service can we keep the standards of fire protection up to a level where they will assure maximum safety to life. Your cooperation is needed.

SUPPLEMENTARY PUMPING

by Warren Y. Kimball, Manager, NFPA Fire Service Department; Editor, FIREMEN Magazine

AS FIREMEN has mentioned before, there are numerous situations where the hydrants to which pumpers are connected nearest a fire do not provide an adequate supply, particularly at large fires where numerous lines are in service with a resulting drop in residual pressures at the pumpers near the fire. This situation is responsible for a majority of the reports of "low water pressure" which is a major handicap at serious fires.

Actually, in many of the cases where hydrant pressures drop seriously, it is possible to supplement the supplies from the overtaxed mains near the fire by what is termed "supplementary pumping." This is not a new art but is one which many fire departments fail to utilize because no routine procedure for such supplemental pumping has been developed and taught in the local fire department training program and because it requires some information regarding the local fire mains which all too many fire departments have neglected to obtain.

Here's how the supplemental pumping program is carried out by the Boston, Massachusetts, Fire Department where each engine company has had special training in this operation. Every district chief has been furnished with Water Department maps showing the water mains in the district. The actual supplemental pumping operation at fires is the direct responsibility of the chief of the Maintenance Division and the officers of the Motor Squad who are responsible for the efficient operation of pumps at fires, although other chief officers may order supplemental pumping as needed. The plan normally goes into service at third or greater alarms as required, although it may be used at any fire where needed.

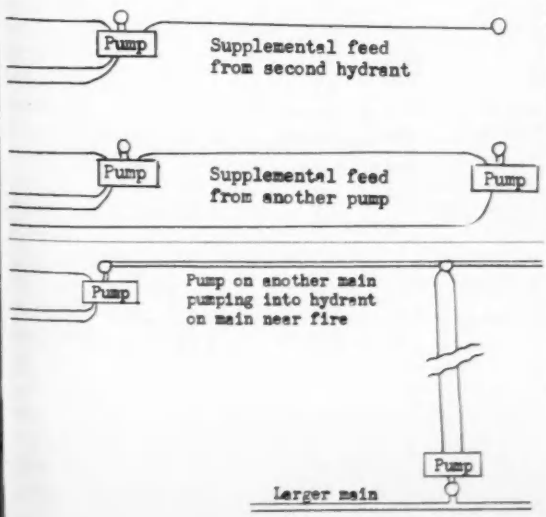
The method used is simple; where the residual pressures have dropped seriously at hydrants supplying pumpers near the fire, other pumpers are placed on different mains which are not under heavy demand. A line from the supplementary pump or pumpers is connected into a 2½-in. inlet on each of the pumps near the fire which need a reinforced supply.

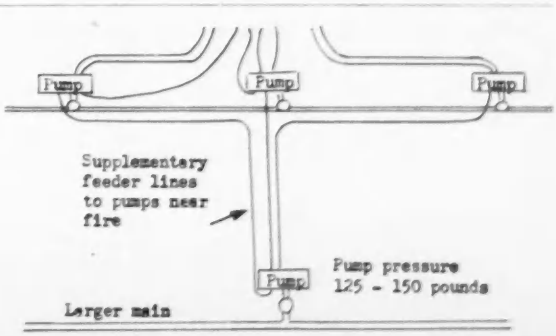
Captain-Drillmaster Cornelius F. Finnegan, of the Boston Fire Department, reports that one supplemental pumper on a separate main can service three pumpers near the fire. Generally, the supplemental pumper is stationed two blocks from the fire. It is initially operated at 125 pounds which will provide an average of 250 gpm each through 2½-in. lines to three different pumpers. If the supplemental pumper finds that it has a good residual pressure when in operation the discharge pressure may be increased in 10-pound intervals if desirable, provided that the hydrant residual at the supplemental pumper remains above 20 to 25 pounds.

Captain Finnegan points out one fact, often overlooked: that a relatively small amount of supplemental help to a pump near the fire will make a big difference because "often the difference between a poor stream and a good one is only 50 to 75 gpm. One supplemental line to a pump at a fire supplying both a deck gun and a 250 gpm hand line not only provides good streams but the residual pressure on the main near the fire is greatly improved because the excess load on that main has been reduced to a point where it can supply the demand efficiently."

These supplemental lines do not need to provide nozzle pressure because the pumps at the fire will do this, and this pressure will give an additional 250 gpm per line through lines at least 800 feet long and 200 gpm per line up to 1,200 feet.

A 750 gpm pumper can supply three other pumpers and larger pumpers can serve even more. The only job is to run the necessary lines. Of course, static water which may be polluted is never pumped into a private main. The diagrams show a typical operation.





Four typical layouts for supplementary pumping. While the 125 pounds supplemental pump pressure mentioned in this article may seem low, it has been adequate in actual practice. At one waterfront fire, where long lines were a problem, one supplemental pumper working at draft was able to correct the supply situation for a number of pumpers.

ONE CHANCE IN 100 MILLION!

Some suggestions for fire department inspectors on building exits and what can be done to improve them

by Robert S. Moulton, NFPA Technical Secretary and Secretary, NFPA Committee on Safety to Life

THE chance of a fatal fire in any given building on any given night is exceedingly slight, perhaps one chance in 100 million. This is the primary reason why fire precautions are neglected, and why exits are so poorly maintained.

Balanced against the slight chance of fatal fire, is the inconvenience of being careful, and the practical objection to maintaining exits. Fire exits are designed to permit people to leave quickly and without hindrance in a fire emergency, and these same exits can be used at any time by thieves and others who want to get out in a hurry. They also are frequently used for access for improper purposes, and thus there is a powerful incentive to lock them, since this is much easier than exercising sufficient supervision to prevent improper use of the exits.

Very few people, other than the fire department inspector, even notice that exits are locked. Few people other than firemen do anything about it even if they notice. Why bother? The chances of fatal fire tonight are less than one in 100 million.

The same thinking, or rather lack of thinking, applies to other features of exit maintenance. Fire doors are blocked open to avoid the inconvenience of opening them to pass through, or to promote ventilation. Exit doors swing against the direction of travel, exit lights and signs are missing, exit stairways are blocked with broken furniture storage and other obvious defects continue until the fire department inspector calls attention to the hazard. Then something may be done, but frequently the inspector will find the same condition again on his next visit.

Perhaps the worst condition is the door which should be kept closed, held open with a wooden wedge underneath. In a fire, the wooden wedge might burn out and let the door close, after the fire had done all its damage.

When people are burned to death or suffocated, particularly in a case where many lives are lost, there is a public clamor for corrective measures. Laws are passed, enforcement is stepped up, and many extravagant measures proposed. Some permanent good comes out of every major fire disaster, but after a time maintenance deteriorates, and in general only the fire department takes any real responsibility for public safety. Major fire disasters have been studied by the National Fire Prevention Association Committee on Safety to Life, and reasonable measures worked out for minimizing the danger to life from fire. All these are incorporated in the Building Exits Code (NFPA No. 101, $1.50), which has been in existence since 1913 and is continually revised to keep it up to date.

Where exits are locked or protective fire doors are blocked open, the exits are worse than useless, and the amount of money spent for exit construction is completely wasted. How many millions of dollars spent for exits to comply with some law are wasted because the exits are not maintained is anybody's guess. If the exits are not needed, why spend money for them?

One of the difficulties with the situation is the fact that exit plans are subject to approval of the building department, but after construction it is only the fire department that makes continuing inspections. There are some notable exceptions in communities where there is real cooperation between building and fire departments, or where the fire chief and the building inspector are one and the same man, but in general if fire exits were planned by the same firemen who see what happens to exits in actual use of buildings, and who know what happens in a fire, the situation would be better.

Thousands of examples might be mentioned — you can probably find plenty of examples of exit deficiency or lack of proper exit maintenance within a short distance of wherever you live.

Consider, for instance, the case of a large hotel in an eastern city. The only public way out of the lobby is through revolving doors, installed to prevent drafts, but a potential death trap in case of panic, as was shown in the Cocoanut Grove night club fire in Boston where 493 people perished. The people selling revolving doors claim that they have an automatic collapsing feature, so that in any panic rush the leaves of the door will swing open and provide a clear path on both sides. However, if the friction catch is adjusted to permit ready operation, the door may collapse accidentally, and if the catch is set up tight, the door may not collapse when it should.

In the same hotel there are several exit stairways, all properly enclosed above the fourth floor, but all open below with nothing to prevent smoke from passing up the stairways, which might well serve as natural flues for any fire in the lower part of the hotel. There is a bridge from the roof across an alley to the roof of an adjoining building, which is an excellent exit for the roof, but with the stairways full of smoke, how is anyone to reach this exit? There is, to be sure, one exitway which is not open to the lobby, but this leads down by a devious route, and finally ends, not outdoors, but in a basement kitchen and storage area. Did anyone who knew anything about fire have anything to do with planning the exits in this building?

The illicit use of exits is a serious problem in many hotels, schools

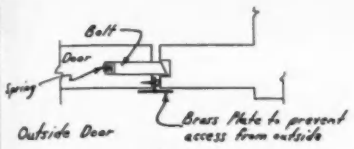


Fig. 1

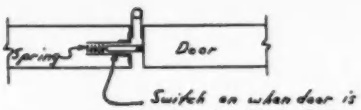


Fig. 2

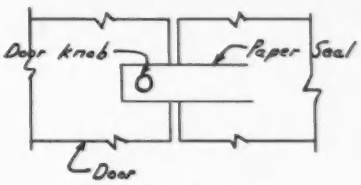


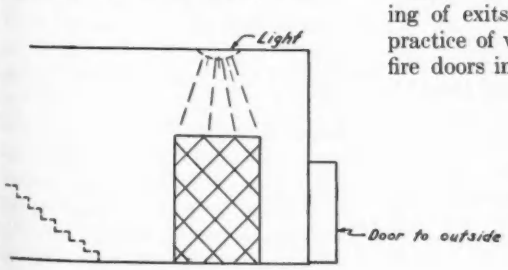
Fig. 3

apartment houses and other buildings. The easy way to stop this is to padlock the exits, in complete disregard of public safety. There are, however, a number of ways in which improper use of exits can be prevented, or at least discouraged.

Consider, for example, the conventional type of latch, opened from the inside by a knob or by a panic bar, but with no way of opening from the outside. Offhand, this would seem to be a good way of preventing access from the outside, assuming no collusion from within. However, a hack saw blade inserted in the crack can easily saw off the bolt. But a brass plate, properly installed as shown in Fig. 1 will prevent this.

One of the simplest methods of discouraging the improper use of exits is an electric alarm, controlled by a door switch, as shown in Fig. 2. Another is a paper seal, as in Fig. 3.

Where exitways can be so located as to be under continuous observation, the problem is greatly simplified, and through the use of wired glass observation panels and lights (see Fig. 4), one individual can supervise several separate exits. An automatic camera can be substituted for personal supervision (see Fig. 5), but this arrangement can be readily defeated by anyone who understands the set-up.



WIRED GLASS OBSERVATION PANEL

Fig. 4

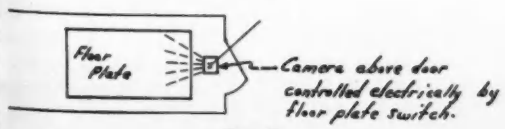


Fig. 5

Various locking arrangements, such as with a key behind a glass panel, are not too effective, and are definitely prohibited by the Building Exits Code, on the ground that in a panic rush no one would know how or have time to use them. Actually, there is no substitute for personal supervision.

One of the provisions of the Building Exits Code prohibits any latch to hold the bottom swinging section of fire escape stairs in the up position (Fig. 6). This was in effect from 1913 to 1957 without any fire to demonstrate the need for such a prohibition. The idea of the latch, of course, is to prevent the use of the stairs for access to the building. With a latch, no one can reach up with a hook and pull the swinging stairs down. But what marauder on mischief bent would be stopped from using the fire escape just because there was a latch to prevent the swinging stairs from being pulled down? In any event, the wisdom of the Building Exits Code provision was demonstrated in a factory fire in New Haven in January 1957 when ten people were killed. There was a latch on the swinging section of the fire escape, and this latch, not pushed, prevented the stairs from swinging down until too late.

Even more serious than the locking of exits is the all-too-common practice of wedging fire doors open, fire doors installed to protect ways of exits, and which must be kept closed in order to function. Stair doors are wedged open, in complete disregard of their function, and this practice is so widespread as almost to defy the efforts of anything but the very best of inspection programs. Doors are kept open for ventilation, for ease in cleaning, and just to avoid the bother of pushing them open when passing through.

Why spend the money to install the doors, or why have the stairway at all, if doors are to be blocked open?

Doors can be blocked open day after day, night after night, and nothing happens. But once in a while it does, as, for example, in a Minneapolis hospital fire where stair doors were wedged open and seven people died, or in a Newark hotel, where a fire on the street floor killed two people on an upper floor when stairway doors were blocked open.

One of the best methods of dealing with the problem of stair doors blocked open is to use the smokeproof tower type of exit (Fig. 7). With this type of exit, there is no incentive to block doors open, and if they were blocked open the integrity of the exit would not be impaired. Persistent violators of rules for keeping stair doors closed might well be ordered to provide smokeproof towers.

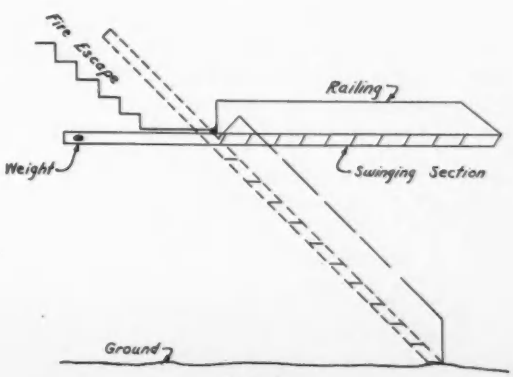


Fig. 6

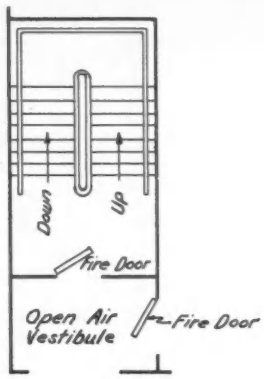


Fig. 7

The simple method of providing a fusible link door closer is not effective, because it is much too slow to prevent loss of life by smoke; it works in case of actual fire, but not before lethal quantities of smoke have passed. Manual closing of doors in case of fire is much too uncertain to be relied upon, except where there is a well organized, reliable fire drill procedure as in a school, where closing doors is a routine part of the drill.

It is theoretically quite possible to provide automatic smoke detectors to close doors in case of fire, but this would require central station supervision to assure reliability, and would be too costly for ordinary use.

A smoke-stop door in a long corridor has a most useful function in case of fire — if it is closed. But like stair doors, smoke-stop doors are all too often wedged open. There is fortunately a simple way of dealing with this, though one seldom followed in actual practice, and that is the use of automatic electric controls to open the door when someone wants to pass through. See Fig. 8.

Horizontal exits, consisting of doors through fire walls, increase exit space without providing additional stairways, and are highly desirable if properly installed. A fire wall, however, has the purpose of preventing the spread of fire, and for this purpose, doors on both sides

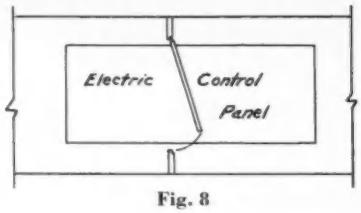


Fig. 8

are generally required to protect any opening. Automatic doors on both sides are satisfactory to prevent spread of actual fire, but not smoke, for which purpose a closed door is needed, and it must swing with the exit travel if it is to qualify as a horizontal exit. The dual purpose can be served by an arrangement like that in Fig. 9. Two openings are needed for exit in both directions, each with the door swinging in the direction of exit travel.

Screen doors present an exit problem, even though light in construction and easily forced open. Four men died in a fire in a southern Army barracks just because a screen door swung against the exit travel, in violation of the fundamental requirement that there must be no obstruction to rapid exit travel. A little ingenuity can solve such problems, and it is not at all necessary to have regular doors and screen doors swinging in opposite directions. A screen vestibule, Fig. 10, is a simple way of dealing with this situation. Where there is not room for a vestibule, a more complex arrangement could be used as shown in Fig. 11. Here, both regular door and screen door are on the same opening, the regular door outside, with the latch controlled by a panic bar, with an interlock to close.

The revolving door is a good method of stopping drafts, but is unsafe unless there are swinging exit doors nearby, and is prohibited by the Building Exits Code in occupancies such as places of assembly. The revolving door, however, is by no means the only method of stopping drafts. For example, there are so-called air doors, where an air cur-

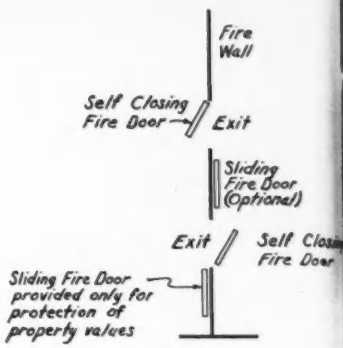


Fig. 9

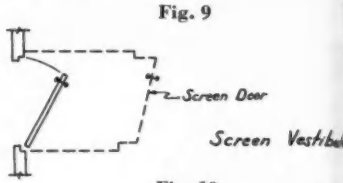
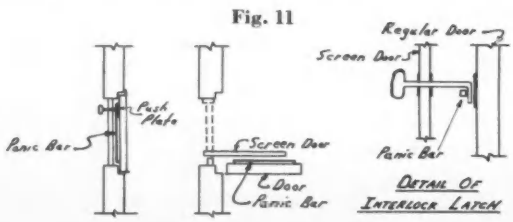


Fig. 10

rent stops all drafts with no actual door at all. A simpler method, used where revolving doors have been removed, is to have a vestibule, with swinging doors on both sides, often with extra heat provided in the vestibule. This works fairly well except when traffic is heavy and doors on both sides of the vestibule are open at once. In that case, cold air can be stopped from entering the building by a combination of heat and down draft as shown in Fig. 12.

The examples mentioned in this article represent only a small fraction of those involved in life safety from fire, but they are typical of the details that require consideration. Fire exits are usually an afterthought in building design. If they could only be planned with the building, and with some understanding of the function of the exits and of the behavior of fires, countless lives could be saved, not to mention millions of dollars of saving in the exit facilities that are unnecessarily costly or are not really needed at all. Beyond this, however, a much better understanding of fire emergencies is needed on the part of the general public, and it is the fire department's problem to maintain an unremitting program of public education in fire safety.

Fig. 11



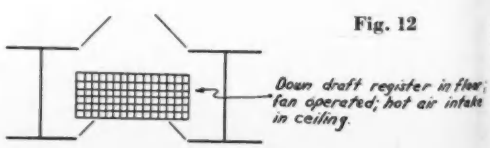


Fig. 12

LOS ANGELES WELCOMES THE CHIEFS!

The Biltmore Hotel in downtown Los Angeles, headquarters for the 85th IAFC Conference.

FIRE Chiefs William L. Miller of Los Angeles and Keith Klinger of Los Angeles County will be hosts to the 85th Conference of the International Association of Fire Chiefs September 15–18. Headquarters for the meeting will be the beautiful Biltmore Hotel in the center of Los Angeles, and exhibits of manufacturers' new apparatus and equipment will be in the Shrine Exposition Hall at 3443 South Hill Street. Special arrangements have already been made to have fast and adequate transportation available at all times to the Hall.

The fire chiefs who attended the 1957 NFPA Annual Meeting are aware of the excellent hospitality and efficiency of the Los Angeles and Los Angeles County Fire Departments. Chief Miller, Chief Klinger and their entire staffs of officers and men have been preparing for this 85th IAFC Conference for more than a year — a sure sign that the visiting chiefs, their families and guests will be treated as royalty. A description of these outstanding fire departments appeared in the May 1957 issue of FIREMEN magazine with a follow-up story in June. The officers and men of both departments are among the highest paid of fire service personnel in the nation. Each department has a tremendous area to protect with concomitant problems of administration, organization and fire fighting.

Sunday and Monday will be used for advance registration and meetings of the IAFC Board of Directors and the Pacific Coast Inter-Mountain Association of Fire Chiefs.

Tuesday morning, 9:30 A.M., brings the formal opening of the program with welcoming addresses by Chief Engineer Miller and Mayor Norris Poulson of Los Angeles; a response by Chief Reynold C. Malmquist, Minneapolis, Minnesota, first vice president of IAFC, and the message of IAFC president, Chief Donald S. Charles, of Charlotte, North Carolina. Tuesday morning, the Shrine Exposition Hall will open for exhibits and will remain open the entire week.

Tuesday afternoon will feature talks by Dr. W. Ballentine Henley, president, College of Osteopathic Physicians and Surgeons, Los Angeles, and a panel discussion of "Yardstick of the Fire Service." The latter part of the afternoon session will consist of IAFC committee reports. Wednesday morning will bring a talk by Leo A. Hoegh, director, Office of Defense and Civilian Mobilization, Washington, D. C.; a panel discussion on "Needs of the Fire Service" and committee reports. On Wednesday afternoon there will be a special "Fire-o-rama" program conducted at the Coliseum, a trip to Disneyland and a barbecue.

William L. Miller, Chief Engineer, Los Angeles Fire Department

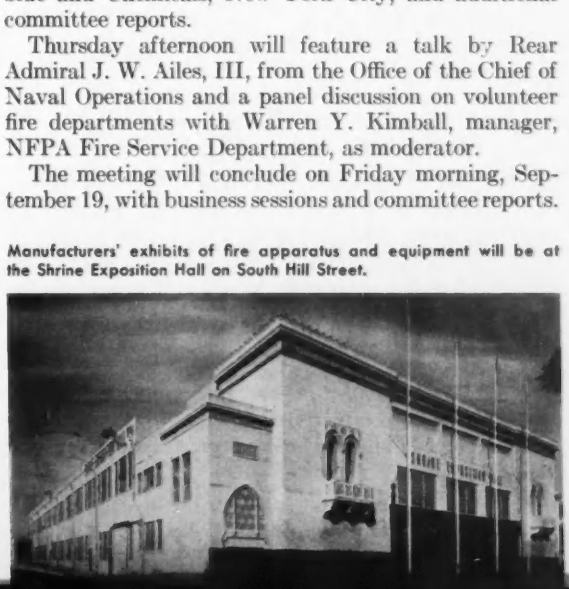
Keith E. Klinger, Chief Engineer, County Forester, Fire Warden, Los Angeles County

Thursday morning will feature a talk on "The New Age of Science and the Fire Officer," by Dr. Leonard C. Silvern, Hughes Aircraft Company, Los Angeles; a discussion of fire-police integration; a talk on the fire hazards of materials by James J. Duggan, Union Carbide and Chemicals, New York City, and additional committee reports.

Thursday afternoon will feature a talk by Rear Admiral J. W. Ailes, III, from the Office of the Chief of Naval Operations and a panel discussion on volunteer fire departments with Warren Y. Kimball, manager, NFPA Fire Service Department, as moderator.

The meeting will conclude on Friday morning, September 19, with business sessions and committee reports.

Manufacturers' exhibits of fire apparatus and equipment will be at the Shrine Exposition Hall on South Hill Street.



MAKING THE MOST OF A FIRE REPORT

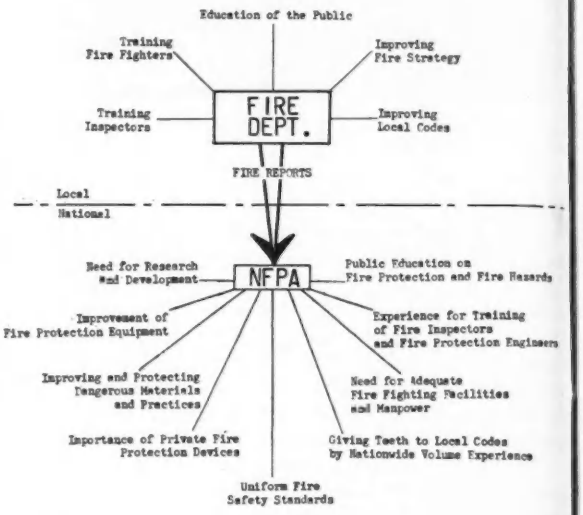
by Rexford Wilson, Engineer, NFPA Fire Record Department

THE value of a fire report extends far beyond your filing cabinet. In many instances, fire reports sent to NFPA by fire departments form the basis for major changes in fire protection on a national scale.

Take the case of an improperly labeled, all-purpose, liquid cleaner that caused several fires late last year. The fire department reports of these fires brought prompt action. NFPA Flammable Liquids Engineer, Miles E. Woodworth, wrote the manufacturer, and the chief chemist of the concern was in Mr. Woodworth's office the following afternoon. This concern had been aware of only one fire of questionable cause in which its product was involved. After studying the various fire department reports, the company promptly decided to use NFPA Standard No. 326 — "Warning Labels for Flammable Liquids" in conjunction with local code requirements to solve this problem. The correction program was under way by the time the Federal Trade Commission insisted on the label change several weeks later.

Sometimes the action is slower but just as dramatic. Take the case of the water cooling towers. A few years back Richard E. Stevens, Engineer, NFPA Fire Record Department, noticed a large influx of reports on expensive fires occurring in water cooling towers. Most of these towers were in full operation with enough water flowing through them to operate several good hose streams. It soon became obvious, however, that on a nation-wide basis these fires occurred with regularity. An NFPA Committee was formed to examine these fires and develop recommendations to prevent them. As a result an important new standard, No. 214T — "Fire Protection of Water Cooling Towers" was tentatively adopted by the NFPA Annual Meeting this year.

These cases indicate how important it is to combine individual local experience into a record of over-all national experience.


Education of the Public
Training Fire Fighters
Improving Fire Strategy
FIRE DEPT.
Training Inspectors
Improving Local Codes
FIRE REPORTS
Local
National
Need for Research and Development
NFPA
Public Education on Fire Protection and Fire Hazards
Improvement of Fire Protection Equipment
Experience for Training of Fire Inspectors and Fire Protection Engineers
Improving and Protecting Dangerous Materials and Practices
Need for Adequate Fire Fighting Facilities and Manpower
Importance of Private Fire Protection Devices
Giving Teeth to Local Codes by Nationwide Volume Experience
Uniform Fire Safety Standards

The many applications of a fire report are shown in this sketch, which illustrates the importance of reports on the local level and how the information can effect changes on a national scale.

The NFPA Fire Record Department will send a reasonable supply of report forms on request. — *Ed.*

The Fire Report and the Fire Chief

Quite aside from the national importance of fire reports, the local importance usually is great enough to make a thorough report "pay its own freight." Good reporting and analyses of fires may indicate the need for new or revised local ordinances, or for additional fire prevention activity.

The man who investigates the fire, fills out the report and draws the sketches learns to recognize local problems and hazards.

The fire department can gain additional "mileage" from these reports by using them as the basis for problems at fire school or at meetings. These "chalk talks" involving actual local fire experience usually are more effective than imaginary or "imported" fire stories.

The procedure for utilizing these reports is simple. Once the report is completed a copy is kept for local use. A copy is forwarded to the NFPA only when the fire causes loss of life, property damage over $50,000, or involves some slightly unusual or different feature such as fires occurring in unusual occupancies (gasoline filling station, nursing home, tank truck, etc.), having a fast fire spread, involving new materials or construction techniques, resulting in complete destruction of building, and many others. (The rule here should be: if in doubt, send it in.)

The Fire Report and the NFPA

As the thousands of fire reports come to NFPA each year, they are studied for significant information. For example, every so often the fire experience in various occupancies is gathered, analyzed and published. So far 33 Occupancy Fire Records have been published covering types of occupancies from private dwellings to electric-generating stations.

Here is a typical story from the 1958 April *Quarterly* Large Loss analysis, developed from a fire department's report and sketches.

Aug. 9, Portsmouth, Va., Monroe Hotel, et al. $1,017,500

The roof and top story of the unsprinklered 20,000 sq. ft. 5-story brick, woodjoisted building were destroyed by fire that originated in the concealed space between the roof and fifth story ceiling. Because of the extent of damage and the many violations of the Building Code, the 100-year-old building was ordered razed following the fire.

The fire was discovered by a fifth story guest at about midnight. There was a delay of several minutes in fire department notification while the night clerk investigated and then tried to notify the hotel manager before pulling a fire alarm box across the street. The fire was for the most part confined to the undivided roof space when firemen arrived, but open stairways and corridors were filling with smoke and several of the 60 hotel guests (the hotel occupied the three upper floors) were waiting at windows to be rescued. Others had

(*Continued on page 51*)

Suggestions for fire officers by Clark F. Jones, NFPA Gases Engineer

HOW TO TEST HOSPITAL OPERATING ROOMS

MANY of you have been called upon to assist hospitals in setting up fire safety programs, have conducted fire drills and have instructed employees in duties essential for an emergency. Presumably you have made reinspections and have been helpful to the hospital administrative staff in other matters pertaining to fire safety.

During the past several years many hospitals have been enlarged or have modernized their facilities, and frequently these improvements have involved the operating room suite. As you may know, the NFPA Committee on Hospital Operating Rooms has developed Standard No. 56 — "Recommended Safe Practice for Hospital Operating Rooms," a useful set of recommendations on this subject. Like other NFPA standards, No. 56 would be a valuable item in any fire station library.

Suppose, for example, someone in a local hospital called your fire department and asked about conductive flooring for an operating room. Could you state why this type of flooring is necessary? Do you know how to test flooring and what equipment should be used? NFPA Standard No. 56 gives important advice on these subjects and much of the following information is taken from its contents.

In hospital operating rooms where flammable anesthetic agents are used, a conductive floor serves as a convenient means of connecting persons and objects electrically to prevent the accumulation of electrostatic charges. Electrical paths with resistances not exceeding 5 to 10 megohms *between the objects or persons* will generally prevent the build-up of dangerous voltages. The upper limit of 1,000,000 ohms was selected by the NFPA Committee on Hospital Operating Rooms for the resistance of the floor as meeting this requirement with reasonable provision for *other resistances in the conductive path.*

Electrostatic charges can set up dangerous differences in potential only in the presence of materials which are electrically nonconducting. Insulating materials act as barriers to the free movement of electrostatic charges and prevent the equalization of the electrical potentials. Thus, a spark discharge can take place only when there is no other path of greater conductivity through which equalization may be accomplished.

Floor Testing

When two electrodes are placed three feet apart at any points on the conductive floor, Standard No. 56 requires that the resistance measures less than 1,000,000 ohms and more than 25,000 ohms. For protection against electric shock, the resistance of the floor must be more than 25,000 ohms, measured between a ground connection and an electrode placed at any point on the floor.

In measuring resistance to ground, two measurements are made at each location, with the test leads interchanged at the instrument between measurements. An average of these measurements is taken as the resistance to ground at that location. All readings must be taken with the electrode or electrodes more than three feet from any ground connection or grounded object on the floor.

If the resistance changes appreciably during a measurement, the value observed after the voltage has been applied for about 5 seconds shall be considered to be the measured value.

Test Electrodes

Before tests are conducted, the floor must be clean and dry and the room free of explosive gas mixtures. Each test electrode has to weigh 5 pounds and have a dry, flat, circular contact area 2½ in. in diameter having a surface of aluminum or tin foil 0.0005 to 0.001 in. thick backed by a layer of rubber ¼ in. thick and measuring 50 plus or minus 10 hardness as determined with a Shore Type A durometer.*

A suitably calibrated ohmmeter with a nominal open-circuit output voltage of 500 volts D.C. and a short-circuit current of 2.5 to 10 milliamperes is necessary for proper

This exhibit, set up for a meeting of the Clinical Congress of the American College of Surgeons several years ago, featured hospital operating room equipment needed to comply with Standard No. 56. Included were explosion-proof electrical equipment, conductive floors, casters and shoes, and testing equipment.

*American Society for Testing Materials' Tentative Method of Test for Indentation of Rubber by Means of a Durometer, ASTM Designation D676-49T, obtainable from ASTM, 1916 Race Street, Philadelphia 3, Pa.

(*Continued on page 43*)

1,000-TON TITANIUM BLAZE

As most fire fighters know the so-called "light metals" such as magnesium and titanium not only burn intensely when ignited but are almost impossible to extinguish when large amounts are involved because water accelerates burning often with explosive violence. The Hartford, Connecticut, Fire Department, under Chief Henry G. Thomas (President of NFPA), recently fought what was probably the largest scrap titanium fire ever experienced by a municipal fire department. Chief Thomas' report on the fire follows:

(Military Department, State of Connecticut, photo)

ON JULY 24, 1958, at 11:04 A.M., fire headquarters received a telephone call reporting a fire in material in the storage yard of Suisman and Blumenthal, Inc., 79 Willow Street. At the same time, Fire Box 655 was pulled from the street. The fire was in an accumulated pile of approximately 1,000 tons of titanium alloy scraps and turnings in open storage along the west boundary line of the yard. This pile was approximately 300 ft. long, 65 ft. wide, with an average height of 40 to 45 ft.

The first alarm assignment was three engine companies and one aerial ladder company with one deputy fire chief in charge. Deputy Chief Shortell, recognizing the potential dangers to existing exposures, immediately transmitted a second alarm by radio and ordered hand lines and deluge sets arranged to protect exposures on the premises.

The second alarm response at 11:08 A.M. brought three additional engine companies, one aerial ladder truck and the Chief of Department to the scene but did not recall off-duty personnel. Eleven minutes later, at 11:19 A.M., Chief Thomas ordered a third alarm which brought another three engine companies and one aerial ladder truck to the fire and recalled off-duty personnel.

The rapid and intense spread of this fire in the scrap titanium soon involved a single story, concrete block building in which was stored approximately 15,000 pounds of magnesium scrap. This was a windowless structure, approximately 50 ft. long, 30 ft. wide by approximately 15 ft. in height. It was exposed to the titanium alloy from the south end of the pile, a distance of about 25 ft. Because of this close exposure, and through the medium of the wooden doors of the building, the magnesium waste quickly ignited and combined with the titanium waste resulting in a lively and spectacular fire.

The intense heat of the burning magnesium, with the pressure built up in the concrete block structure, completely collapsed the building. Minor explosions, about 30 in number, knocked out windows in the neighborhood and scattered hot pieces of magnesium about the area. Trains of the New York, New Haven and Hartford Railroad, whose tracks bound the Suisman property from north to south on the west side, were halted. Power lines along this right of way, carrying up to 22,000 volts, were exposed to the fire and were shut off as a safety measure.

Companies responding to the second and third alarms were directed to cover exposures as follows: five streams from 2½-in. hose were hand-operated onto and from the interior of the buildings on the premises in addition to three deluge sets. The deluge sets operated with 1½-in. tips with a 500-gallon fog head attached to one to reduce heat in the area and to serve as a protective water curtain. Each set was connected with three 2½-in. hose lines with an average length of 600 ft. and all were supplied from pumping engines. Water supply was good, and adequate pressures were maintained with nozzle pressures on all

(Continued on page 52)

After exposure danger had been reduced heavy streams were applied to mop up fire in the metal storage area.

(Hartford "Courant" photo)

TOUGH TRAILER FIRE IN DALLAS!

An important report by
Chief C. N. Penn, Dallas, Texas, Fire Department

TWENTY-NINE Dallas, Texas, firemen were sent to a hospital for treatment of inflamed eyes and for observation after a recent trailer fire involving chemicals. On Sunday, June 8, 1958, 1:09 P.M., Engine Company 42 of the Dallas Fire Department was sent to investigate a 32-ft. trailer van parked in the yards of the Central Freight Lines Company. When the engine arrived, a strong, sweet odor was covering the area in spite of a 21 m.p.h. wind blowing from the south. This strange scent and wisps of smoke seeping from the trailer was the reason for the emergency call.

The trailer van was parked among a long line of trailers in one of the Southwest's largest truck terminals in a semi-commercial district. Posted around the sides of the trailer were signs which read "Danger." Dull thudding noises from the inside of the van emphasized this point. Terminal employees reported four explosions before Engine 42 arrived, less than three minutes from the time the alarm was received.

Immediately, the fire fighters pulled the trailer van into an open drive to facilitate operations and lessen exposure hazard. A radio message for a battalion chief was made while the terminal supervisor went to get the bill of lading, which was of little help in determining the manner in which to proceed. The meager description of the cargo revealed only that the contents were "205 carboys of a flammable liquid (no other specifications), an oxidizing material, bearing the red label, being shipped from a chemical firm in New York to a firm in Orange, Texas." No special instructions or indication of the chemicals' nature were given on the bill. While the situation was sized up — a matter of seconds actually — more muffled reports came from the trailer. A decision to use a high pressure pumper brought Engine 11.

It was now 1:20 P.M. and smoke still issued from the cracks around the door and settled heavily, almost ominously, on the ground. A thin trickle of liquid dripped from the truck body, but no smoke or flames accompanied it. Tentative tests with water on the spilled liquid showed no reaction. Following this, a hole was cut high in the front of the trailer and a high pressure nozzle was inserted. Trailers were placed alongside the stricken trailer to divert the expected explosion away from the terminal building and the hundred-odd freight-laden trailers in the yard. Explosions, some more intense than others, continued, but with no apparent increase in either fire or heat. The truck's body panels were still intact and the paint was unblistered.

The application of water into the trailer had an immediate effect, for the explosions subsided somewhat. Success with one line led to the use of a second nozzle injected in the side at the rear of the trailer. When this line came into play, all the worrisome noises ceased.

During these tense moments, the terminal manager had telephoned the firm in Orange, Texas. The word from the firm's chemist confirmed their fears and justified the fire fighters' hasty actions. The 205 carboys contained a highly flammable liquid, a very toxic substance — one that was subject to violent explosions. The suggestion to use quantities of water had already been put into effect, but the advice to stay away from the burning material had to be ignored if the blaze was to be quelled. By this time, the deputy chief had taken charge of operations and ordered the rear doors opened and the cargo flooded. The big lines were supplanted by small hand lines using 1½-in. low pressure fog nozzles. Gas masks were necessary to allow the firemen to perform the overhaul of the damaged freight. The toxicity of the liquid had been recognized from the first, and demand-type masks were placed in use.

While the way bill listed 205 carboys, it said nothing of the chemical being of two different types. Even the chemist knew nothing of the cargo being mixed. One hundred sixty carboys contained the chemical "75% T — Butyl Peracetate with Benzene." The labels for this material read "Extremely flammable liquid, harmful poison, store in cool place (not over 100°F) and protect from direct rays of the sun." None of these carboys was damaged by the fire, but of the 45 remaining containers which held an unidentified liquid only three remained intact. This was not discovered until the truck was unloaded, which operation required the use of a water spray for safety. Further conversation with the chemist disclosed the fact that this chemical, also used in the manufacture of plastics, was even more hazardous than the other and was to be kept at temperatures below 70 degrees Fahrenheit. The three undamaged bottles which had not been shattered by the heat and explosions were taken to the City dump because the liquid had become discolored. Observers reported the dump blaze, fed by the chemical, was quite intense and that clouds of smoke resulted from the fire.

The post-fire discussion brought out several factors bearing on the blaze:

1. The chemicals were used in plastic manufacturing and should not have been shipped in the same van.
2. The highly dangerous carboys were supposed to be kept under 70 degrees F. and verbal orders had been given to this effect. When the 45 carboys had last been cooled, is not known. (*When such mixed shipments are carried in non-refrigerated trucks, dry ice can be used for cooling. Drivers need thorough instructions on the need for cooling and where to obtain the ice.* — Ed.)
3. The trailer was a metal-top, uninsulated, nonrefrigerated van and had been in the parking lot since the day before, in temperatures up to 95 degrees F.
4. A strange odor (most likely from the burned carboys) was noticed Saturday night, but not being located, it was ignored.

This discussion led to the conclusion that the shipment of dangerous flammables should be more rigidly controlled, both in interstate and intrastate commerce. It is the opinion of several veteran fire fighters that special instructions for safe handling and fire fighting of such hazardous materials should be carried somewhere on the bill of lading and posted on the outside of the trailer. Unusual precautions, like icing, should also be made part of the cargo record and responsibility for this undertaking should be noted.

WHAT TO DO ABOUT

SAFEGUARDING FLAMMABLE

Some practical tips for fire departments by Miles E. Woodworth, Inmate

CLEANING or safeguarding tanks that have held flammable liquids is extremely hazardous. Precautionary measures must be taken to prevent ignition of flammable vapors and to protect personnel from harmful vapor concentration.

Work on such containers must be done only under the supervision of persons well versed in the fire and explosion potential and in procedures essential to proper safeguarding of the operations. Unless the work can be done with the container and all connected piping and fittings *completely filled with water*, all vapors must be removed by cleaning with steam or chemical solutions or by displacement with water, air or inert gas. In some instances the vapor space may be inerted to provide a safe atmosphere, by specially qualified personnel.

The selection of the method to be used to make a tank or container safe will depend on several factors such as the character of the liquid, size of the tank or container, flammability and reactivity of residues, and the type of work to be performed. For many reactive materials it will be necessary to get information from the manufacturer on the safest way to clean the tank.

Removal of flammable vapors by displacement is known as purging and may be accomplished by one of the following methods:

(1) Displacement with water. When the flammable liquid that was stored in the tank is known to be readily displaced or easily soluble in water, it can be removed completely by filling the container with water and draining, repeating the operation several times until the tests made with a combustible gas indicator show that the vapors have been removed. Acetone and ethyl alcohol are examples of water soluble flammable liquids.

(2) Displacement with air. Frequently, flammable vapors may be removed by purging with venturi-type air movers or low pressure blowers, and a safe atmosphere may be sustained by continued ventilation. Air movers should be restricted to those operated by steam, air or electric motors approved for the atmosphere involved. When small container openings cannot accommodate an air mover, the contents may be purged by compressed air from a metallic pipe bonded to the container. In air purging, the concentration of vapor in the container may go through the flammable range before safe atmosphere is obtained; therefore, all precautions must be taken to insure that the apparatus used to inject the air is bonded to the container to minimize the hazard of ignition by static electricity.

(3) Displacement with inert gas. When carbon dioxide in cylinders or solid form or nitrogen in cylinders is available in sufficient quantity, these inert gases may be used to purge the flammable vapors from containers without the hazards incident to passing through the flammable range. This procedure should be followed by air ventilation.

If properly used, inerting can safeguard a container so it may be worked on. It simply reduces the oxygen content to the point where combustion cannot occur. Permissible inert gases for such use are carbon dioxide and nitrogen. Both may be obtained in cylinders and in truck tanks, and carbon dioxide also may be obtained in solid form. Individuals in direct charge of repair or other work on the tank must be thoroughly familiar with the limitations and characteristics of the inert gas being used. The oxygen content must be maintained at substantially zero during the entire period when work is in progress.

Testing for flammable vapors near underground tanks this fire captain uses an Explosimeter. Such tests are an important part of tank safeguarding and cleaning procedures. (Photo courtesy of Mine Safety Appliances Company.)

It is important that all liquid or solid residues which might release flammable vapors during "hot work" be removed by steam or chemical cleaning, or by other recognized means. In steam cleaning, the rate of steam supply should be sufficient to exceed the rate of condensation so that the whole container is heated close to the boiling point of water. Chemical cleaning, necessary to remove some residues, may bring about special hazards to personnel which should be guarded against.

Testing for flammable vapors is the most important phase of the cleaning or safeguarding procedure. The tests must be made before commencing alterations or repairs, immediately after starting any welding, cutting or heating operations and frequently during the course of work.

No person should enter a tank without respiratory equipment unless the atmosphere registers below 14 to 20 percent of the lower flammable limit on a combustible gas indicator. When "hot work" is to be done on small tanks or containers, the combustible gas indicator must show no appreciable indication of the presence of flammable vapors. Under qualified supervision for tank cars, tank trucks and tanks that

can be entered, "hot work" may be performed safely when the flammable vapors are under 20 percent of the lower flammable limit. Additional precautions, such as protective clothing and self-contained breathing apparatus, are necessary to protect the health of persons entering tanks which have contained leaded gasoline or other highly toxic residues.

The tests made with a combustible gas indicator in good working order produce reliable readings except where inert gas is used, in which instance the concentration of oxygen must be determined directly by an oxygen indicator or indirectly by a carbon dioxide indicator. All testing must be done by persons experienced in the operation and limitations of the indicators.

Special care has to be exercised to eliminate any source of ignition in the vicinity of the container or in the path of travel of vapors being displaced. Bonding must be provided where static producing devices are used, and all electrical equipment such as inspection lights and motors used in connection with the cleaning operations shall be approved for Class I, Group D, hazardous locations.

More complete instructions for cleaning tanks or containers are covered in the following publications. These should be referred to and their specific instructions should be followed carefully:

NFPA No. 327 — "Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers"; NFPA No. 306 — "Control of Gas Hazards on Vessels"; Accident Prevention Manual No. 1, Cleaning Petroleum Storage Tanks, Section A: Crude Oil and Unfinished Products, Section B: Gasoline; and Accident Prevention Manual No. 13, Cleaning Mobile Tanks Used for Transportation of Flammable Liquids, Section A Tank Vehicles, Section B: Tank Cars, both published by the American Petroleum Institute, 50 West 50th Street, New York 20, New York.

...LIQUID TANKS

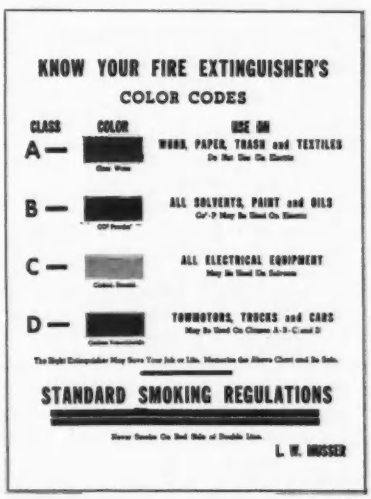
...lworth, ...mable Liquids Engineer

INDUSTRIAL FIRE PROTECTION

Plant Inspections + Key Personnel = Fire Prevention!

AN INTERESTING report of an industrial plant fire brigade has been sent to FIREMEN magazine by L. W. Musser in charge of plant protection, Raybestos-Manhattan, Inc., United States Asbestos Division, Manheim, Pennsylvania. It points out how diligent inspection of plant property and wise selection of fire brigade members have led to marked reduction in fires on the property despite the increase in potential fire hazards because of the introduction of many new and varied solvents.

Right now the plant has three trained brigades, one serving on each shift. About 95 percent of the group are foremen, assistant foremen, supervisors and group leaders — the balance is made up of electrical and maintenance men. In addition, there are 12 department brigades who go into action when a fire occurs in their respective departments. If they need additional help, the siren is sounded and the trained shift brigade arrives to take over. Each department brigade is headed by a trained captain.



Color chart used by Raybestos-Manhattan, Inc., for better identification of fire extinguishers by plant employees. Color A is green; B is red; C is yellow; and D is blue.

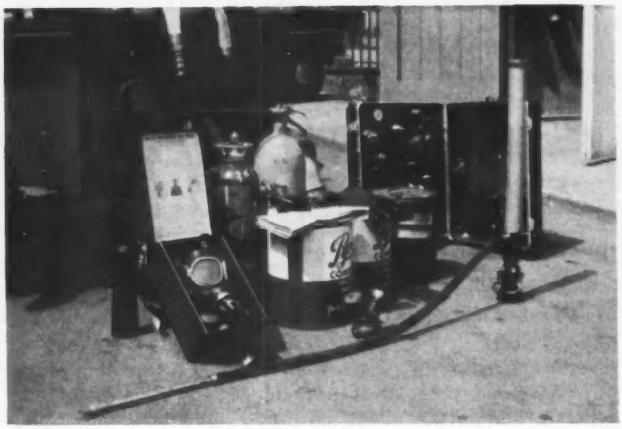
The fact that the main fire brigade group is made up of supervisory personnel has had a threefold effect: it provides sincere men with some authority to make decisions; it educates the foremen to operate a fire-safe department and, third, they are actually part of management and are ready and willing to assume these responsibilities.

During a fire a year ago an incident occurred which pointed up the need for improving the identifying labels used on the plant's fire extinguishers. Accordingly, the plant adopted a new color code which has been reproduced on charts and distributed throughout the plant property. As shown on this page, each extinguisher is painted a bright color, and employees are urged to memorize the color system and be familiar with the proper use of the extinguishers. The color code is shown below.

Class	*Color*	*Use*
A	Green	Textile, paper, wood, etc.
B	Red	Solvents, paint, oil
C	Yellow	Electric
D	Blue	Trucks, tow motors and cars

A special manual has been issued for plant fire brigade members to familiarize them with plant hazards and the techniques of fire fighting. In addition, rigid inspections are conducted monthly and have had a definite influence on the reduction of fires and in reported hazardous conditions. Here is a breakdown of the fire experience at the plant since 1950:

Year	*Fires*
1950	47
1951	43
1952	38
1953	35
1954	30
1955	29
1956	24
1957	20



Photos of trailer equipment and trailer, the latter built by plant fire brigade members, showing (*left*) part of hose load, foam making and respiratory equipment and (*right*) completely loaded trailer ready for pick-up by maintenance truck when fire alarm is sounded.

A problem was obtaining an adequately equipped fire trailer. After studying commercial trailers, the plant fire brigade finally decided to design and build its own trailers suitable for the special needs of the plant. This was accomplished at an average cost of $348.12 for each unit, well below the price of commercial trailers. The trailers are equipped with hitches so that when a fire alarm sounds the yard and maintenance trucks can pick them up quickly and take them to the appropriate area where fire is in progress. Each trailer carries the following equipment: one 2-1 dry foam generator, four cans 2-1 dry foam compound, three cans of three percent low expansion liquid foam, two cans six percent alcohol liquid foam, one combination three percent and six percent foam playpipe, 350 ft. of 2½-in. and 200 ft. of 1½-in. hose together with two 1½-in. fog nozzles, one 2½-in. "Poweron" fog nozzle, one 1¾-in. foam nozzle, one Underwriters' playpipe, two 1⅛-in. shut-off nozzles, one large dual roof light, two small single roof lights, four oil signal lights, two pinch bars, two fire axes, one self-contained mask, a spare oxygen cylinder, a general purpose smoke mask, one pair rubber gloves, one pair asbestos gloves, three pairs rubber boots, three safety helmets, three raincoats, 60 ft. of manila rope, eight spanner wrenches, two hydrant wrenches, 12 extra gaskets, a 2½-in. to 1½-in. reducing wye and an MSA Pneolator.

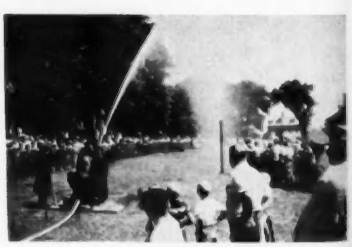
Work and Fun at a Firemen's Muster!

AS THIS month's cover picture shows, manning a "hand tub" is not an easy job. It calls for the combined strength and teamwork of up to 60 to 80 men, working in shifts at top speed. The result of all this manpower might be one good hose stream projected for a distance of 200 feet or more. Still, the tremendous competition of crews in a muster and the excitement of duplicating old-time fire fighting are bringing a resurgence of the muster's popularity.

In New England and New York State, musters in the late summer usually feature parades of volunteer fire fighters dressed in colorful uniforms, pulling hand engines and accompanied by bands and drum corps. The events are carefully planned, well publicized and usually attract good crowds. Photos on this page show the typical action. There may be 15 or 20 crews working their hand tubs at top speed for cash prizes and the prestige of having the best pumper, indicated by the distance that the hose stream is thrown under the keen observation of competent, impartial judges. Usually the fire companies have three or four tries for the best stream.

A concrete cistern filled by a gated hydrant line during pumping is used here as a suction source for the hand tubs. The foremen watch pressure gages and direct pump crews.

A visit to a muster should convince one that it is well that hand tubs have been replaced by our modern pumpers as first line apparatus. In these times we hardly seem to have the manpower for a pumper, let alone a good crew to "man the brakes." Of course, if we *had* to use hand tubs some one would probably suggest that there's always the police . . . !



Nozzle crew direct the stream, taking account of wind direction indicated by banners.

View from the opposite end of course showing judges following the path of stream on manila paper secured to a frame which is carefully measured for exact distance.

DRIVER TRAINING IN HUTCHINSON, KANSAS

SMALLER paid fire departments which normally hire only one or two new men at a time usually have a serious problem of indoctrinating these men and incorporating them into active companies. The larger departments have regularly organized probationary firemen schools where men receive basic training before performing duty as a member of a fire company. Accordingly, it is important that a regular program for training new men be carried out in the smaller cities.

This problem, as well as the matter of advanced fire fighter training, has been resolved by Chief Fred R. Dimond of Hutchinson, Kansas. A training progress record on an 8- by 11-in. report form is kept for each fire fighter. This indicates the training unit or subject, whether instruction was at the station or drill tower, and gradings for each subject on subject matter, aptitude and conduct.

In addition to the individual records the Chief Drill Instructor, P. A. McElheny, keeps a drill school record showing the names, ranks and company of men attending each drill school session or station school; the subjects taught or practiced with subject matter, aptitude and conduct gradings for each member.

In the Hutchinson Fire Department the position of driver and operator is one for which extra compensation is paid and a systematic program is followed for development and training of these men. Five steps are followed in the development program:

1. Probationary firemen are not eligible to drive any fire fighting apparatus during their first six months in the department.

2. Upon completion of six months' probation a man will be eligible, at the request of his commanding officer, to be a student driver. An assistant chief will check the man's progress with the chief instructor. If progress is satisfactory the man becomes a student driver under the supervision of his officer and the driver in charge of the apparatus. Student driver activities include driving the apparatus into the street and backing into the station on any occasion that may require temporary moving of the apparatus.

CITY OF HUTCHINSON FIRE DEPT.
"DRIVER'S RECORD"

FIREMEN .....
HAS BEEN ADVANCED TO:

1. Student Driver
   Date .....
   REMARKS:
   SIGNED
   Assistant Chief .....
   Chief Drill Instr. .....
   Chief Mech. .....

2. Advanced Student Driver
   Date.....Grade .....
   REMARKS:
   SIGNED
   Assistant Chief .....
   Chief Drill Instr. .....
   Chief Mech. .....

3. Relief Driver and Operator
   Date.....Grade .....
   REMARKS:
   SIGNED
   Assistant Chief .....
   Chief Drill Instr. .....
   Chief Mech. .....

4. Driver and Operator, Receiving Driver's Pay
   Date .....
   REMARKS:

3. After 12 months in the department and at least six months as a student driver, a fire fighter becomes eligible to be an advanced student driver after completion of a road test given by the chief mechanic. He then drives apparatus back from fire runs and to non-fire calls. At any time during such activities that a radio alarm is received, the regular driver takes over.

4. When a man has completed the above steps and has at least 18 months in the department he is given tests by the chief instructor and chief mechanic covering the department's drivers' manual, hydraulics, road tests, hookups and pumping from a hydrant, and drafting. After proving qualified he will be recommended to his assistant chief as a relief driver and will be eligible to advance to first-line driver and operator when a vacancy occurs. A "Driver's Record" is kept for each member indicating the date at which each qualifies in the various grades, signed in each instance by the assistant chief, chief instructor and chief mechanic.

The Training Manual for Drivers and Operators prepared by Chief Mechanic E. J. May contains five chapters and is issued to each member. The first chapter entitled "The Apparatus You Drive" includes a description of each piece of apparatus in the department including engine horsepower, oil capacity and viscosity, radiator capacity, gasoline tank capacity, tire sizes and air pressure, as well as the fire fighting equipment. There is information pertaining to all trucks covering ignition, carburetors, cooling systems, fuel, starting motor, brake systems, clutch operation and fire pumps.

The second chapter covers "How the Truck Should Be Driven" and contains good driving rules for fire apparatus operation. The third chapter includes a "Driver's Aptitude Test" given by the city police department. Fourth comes the "Driver's Road Test Record" given by the Chief Mechanic which includes grades on ten items totalling 100 points with a grade of 70 required for passing. Chapter 5 covers "In-Service Maintenance of Apparatus" and includes lists of items to be checked daily, after each run and items to be checked weekly.

The drill program headed by Chief Instructor P. A. McElheny includes these fifteen sessions or groups of subjects that cover 86 specific training items and evolutions.

1. Use of Knots; 2. Hoisting Equipment; 3.-4. Ladder Drills; 5. Review of Knots and Ladders; 6. Ladder Drill and Ladder Rescue; 7. Aerial; 8. Hose Equipment; 9. Hose Evolutions; 10. Hard Suction Hookup; 11. Multiple Line Hose Lays; 12. Pumping; 13. Aerial Truck; 14. Masks; 15. Resuscitation.

In addition, Chief Mechanic E. J. May has prepared a manual covering operation and maintenance of the aerial ladder incorporating material in the manufacturers' manuals with operational instruction.

ROCKWOOD
built-in proportioning systems for industrial and refinery fire trucks

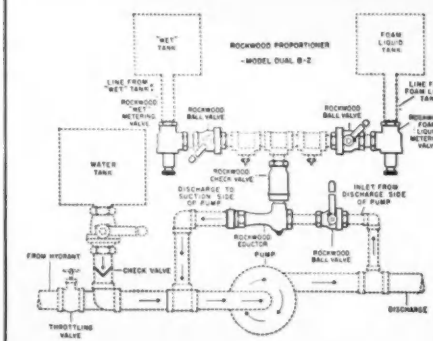
Rockwood-equipped refinery fire truck with Balanced FOAM Proportioning system utilizing ratio flow controller offering simultaneous FOAM and water application. Notice Rockwood's direct manual FogFOAM turret nozzle with single FOAM shaper and screen.

Rockwood's new Double Strength FOAM and Rockwood WET offer you many advantages

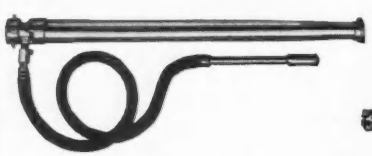
Double Strength FOAM has double foam-making capacity, cutting in half the transportation cost and storage space. It is faster spreading and flows freely — even at subzero temperatures. An outstanding FOAM liquid to go with Rockwood's advanced type of FogFOAM and FOAM Nozzle for quickly putting out fires in gasoline and other similar flammable liquids. Available in 5 gallon cans or 50 gallon drums.

Rockwood WET increases the spread and penetration of water into deep seated fires involving ordinary combustibles such as wood, paper, cloth, etc. It greatly reduces the water needed to extinguish such fires. Available in 50 gallon drums, 5 gallon and 1 gallon cans.

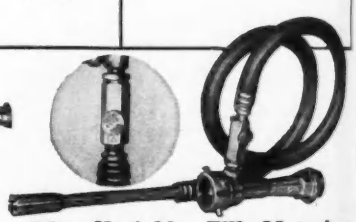
Regular FOAM and All Purpose FOAM are also available.



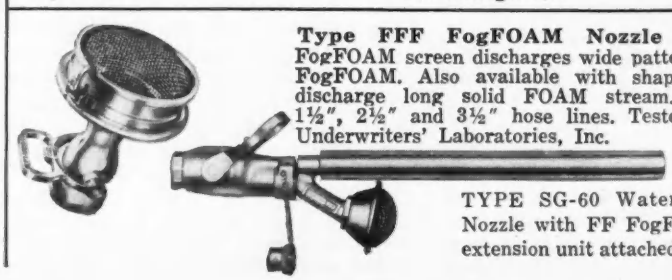
Proportioning System. Model B-2, around-the-pump proportioner. Used when pressure is maintained by pump. Custom-engineered systems are also available.



The F-501 Nozzle developed for use with 1½" hose to provide an economical means of applying a solid stream of FOAM on flammable liquid fires.



The Variable FW Metering-Check Valve with FW Eductor incorporates both the Metering Valve and Ball Check Valve in one unit and meters liquid into the hose line in any proportion from 1% through 6%.



Type FFF FogFOAM Nozzle with FogFOAM screen discharges wide pattern of FogFOAM. Also available with shaper to discharge long solid FOAM stream. For 1½", 2½" and 3½" hose lines. Tested by Underwriters' Laboratories, Inc.

TYPE SG-60 WaterFOG Nozzle with FF FogFOAM extension unit attached

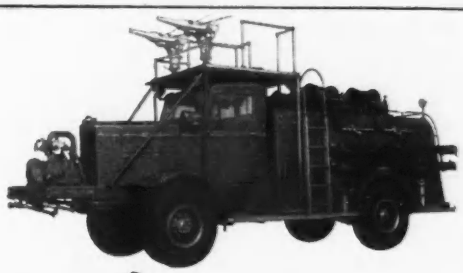
Rockwood offers you 4 types of turret control

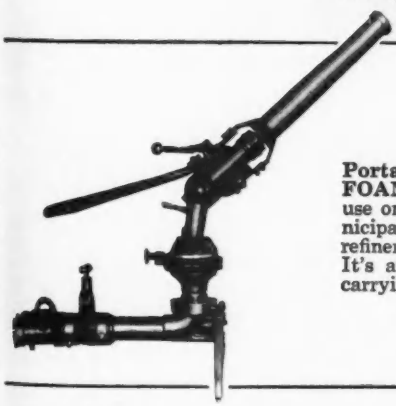
...and any Rockwood turret gives you 4 types of discharge (1) FogFOAM, (2) Solid FOAM stream, (3) WaterFOG,(4) Solid water stream

Remote Hydraulic Control Single Type FFF FogFOAM Turret Nozzle on Type 0-10 U. S. Air Force crash rescue fire fighting truck. Similar turrets can be supplied for oil refineries, chemical and industrial plants and municipalities. Hydraulically operated dual turrets also available.

Remote Manual Control Turret Type FFF FogFOAM with two Ground Sweep Nozzles and two Hand Line Nozzles with FF Extensions, a Piercing Applicator and a Type D Proportioner for Rockwood FOAM and WET provide this New York State Thruway Authority truck with extra fire fighting equipment. The truck was built by Young Fire Equipment Corp., Buffalo, N. Y.

Direct Manual Control Dual Type FFF FogFOAM Turret Nozzles — can be operated directly by firemen from cab roof.



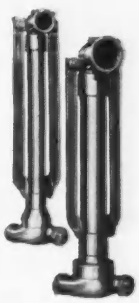


Portable Type FFF FogFOAM Turret Nozzle for use on fire hose lines by municipal fire departments, oil refineries and industrial plants. It's arranged for convenient carrying on fire trucks.

ROCKWOOD

WaterFOG Equipment

Type SG-48 WaterFOG Nozzle. Easy to handle. Discharges high or low velocity WaterFOG or straight water stream.



Lightweight Rotating Cellar and Attic Pipe. Fights fires in cellars, attics, under piers, bridges, etc.

Type N22 WaterFOG Nozzle. Discharges high velocity WaterFOG. For general use around live electrical equipment.

Type N23 WaterFOG Nozzle with Swivel Handles. Discharges high velocity WaterFOG with higher discharge and greater range than Type N22 Nozzle.

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WHAT WILL YOUR CRASH FIRE BE . . .

Mop-up operations at New Haven, Connecticut, after fire fighters extinguished fire in a Convair that "bellied in" and ruptured a fuel tank in left wing. *(Wide World photo.)*

SUCCESS OR FAILURE?

LADY LUCK plays a significant role in many fire fighting operations, particularly when human life is endangered. Certainly Lady Luck is needed during aircraft crash fires. To the responding fire fighters she is almost as essential as sound preplanned operations, and often she spells the difference between success and failure.

Prefire planning paid off at New Haven, Connecticut, on March 1, but Lady Luck helped. Flight 535 of American Airlines (Boston to New York) ran into trouble on take-off with a fire in the left engine. The pilot "bellied" the twin-engine Convair back to earth. A propeller fragment pierced the left wing structure containing fuel. After the plane came to rest, eight occupants escaped through an emergency exit over the right wing and the right main door.

Volunteer fire fighters made quick response when this patrol bomber smashed into dwellings. Four of the twelve crewmen died. *(United Press photo.)*

New Haven's Engine 16 is located on a city street immediately adjacent to the airport, and an automatic emergency access gate gives entry to the field. The Company responded with five men operating a pumper and a small crash wagon carrying 200 gallons of water, 20 gallons of foam concentrate, a foam turret and two fog-foam hand lines. The pumper fed a continuing water supply to a 2½-in. intake of the crash unit, meanwhile dropping off a 2½-in. feeder line with a man to utilize a street hydrant 1,100 ft. from the crash site. Preplanning allowed the crash truck to maintain foam attack until extinguishment was secured.

In addition to the 20 gallons of foam concentrate on the crash truck, fire fighters used 12 other 5-gallon cans of foam liquid. Most of this was required to check the flames as gasoline continued to flow from the ruptured wing and to isolate the fuselage from the fire.

Luck was on their side. First, this particular aircraft design isolates the fuel-containing sections of the wing from the fuselage — a fire safety design feature of the Convair. Other current transport aircraft designs are less favorable under crash conditions, since they permit flame impingement directly on the occupied portions (Reference NFPA Aviation Bulletin No. 82). Secondly, only eight persons were aboard this 40-passenger aircraft and only five were passengers. Furthermore, the accident occurred during daylight hours (10:26 A.M.) under generally favorable weather conditions.

Thus, a combination of prefire planning (including equipment allocation, manpower assignment and training in fireground techniques) plus luck brought about this effective "stop."

Another on-airport accident occurred at Melbourne, Florida, on March 17. Here a landing Eastern Airlines "Silver Falcon" (Martin 404) struck a pile of gravel just off the runway and burned to complete destruction.

Prefire planning was absent in this case, but luck was still in control. No airport fire equipment was available, and apparatus had to respond from Melbourne and the Patrick Air Force Base 30 miles away to handle the fire situation. As the Melbourne *Daily Times* reports: "It was the Air Base equipment which extinguished the flames but not before the plane was totally destroyed."

Lady Luck again came to the assistance, since only 10 were aboard, and Stewardess Jackson was able to shepherd the seven passengers to safety before flames reached the fuselage. Had fire fighting equipment been available at the civil airport, the aircraft could have been saved, according to reports reaching the NFPA. The initial fire, originating near the left engine, was slow to develop as a major threat since the fuel spill was originally just from broken lines, not tanks.

On January 6, 1958, a Navy P4M patrol bomber hit a telephone pole and damaged six houses in East Ocean View, Virginia, before the twin-engine plane finally came to rest against a seventh home. Fire involved the aircraft wreckage and the last home struck. Prefire planning and luck played prominent roles here, too.

Two pumpers from the East Ocean View Volunteer Fire Department, located a half mile from the crash site, responded immediately, and the Davis Corner Volunteer Fire Department also dispatched a pumper. Thus, three municipal fire units were in operation before the Norfolk Naval Air Station equipment, manned by 20 fire fighters, could travel the 10 miles from the Base to reach the scene.

Fire involved an area about 120 by 60 ft. enclosing the main wreckage of the bomber and the frame house. Some 5,000 spectators who gathered hindered fire fighting operation. An open gas line fed the flames involving the dwelling. Despite these handicaps, cooperation between the structural and crash units brought about a consistent, uninterrupted attack on the fire. The fire fighters were using water fog from hand lines on the dwelling when the crash units arrived. Two Navy MB-1 and one Navy MB-2 crash trucks (Reference NFPA Aviation Bulletins Nos. 201 and 202) dispensed foam while two Navy pumpers assisted. Some 99,000 gallons of finished foam were expended from the Navy's vane-type foam pumps through the turrets and hand lines of the crash units within the first 45 minutes.

Dame Fortune was with eight of the 12 crewmen aboard the P4M. They escaped the inferno, aided by persons at the scene. Four others were not so lucky, and their bodies could not be recovered for almost two hours because of the fire and the arrangement of the wreckage. Three civilians, occupants of three of the houses struck, were injured but none was killed. Three unoccupied cars in the wreckage path were also damaged.

Fall Conference in Pittsburgh

THE 1958 Fall Conference of NFPA will be held at the Penn-Sheraton in Pittsburgh, November 17–19. Members of the fire service in surrounding states are invited to attend. In addition to the general program, the fire marshals' section of the Association will hold its annual mid-year conference and a number of NFPA technical committees will also meet. Further details will appear in NFPA *Fire News* and FIREMEN magazine.

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If your uniform is not the best quality, doesn't fit perfectly or wears out much too soon—you are wearing "just another uniform." The kind that looks "off the shelf."

Your uniform *must* pass three major requirements . . . quality—fit—and exceptional wearability.

When your uniform has these basic qualities, you get your money's worth. You get maximum mileage out of every dollar the uniform cost.

And you always look your very best.

Firemen who wear Maier-Lavaty uniforms will tell you they are the finest uniforms they have ever worn. That's because they get longer wear, better service, and the best dollar-for-dollar value anywhere in M-L uniforms. M-L uniforms keep their distinctive appearance, fit and comfort because expert tailors baste in the all-important shape-retaining inner construction by *hand*. M-L design and tailoring pays special attention to the "wear points" of the uniforms they buy . . . with extra care for pockets, cuffs, knees, elbows and coat fronts where wear is greatest. These are just some of the reasons M-L uniforms are for you.

ALL MAIER-LAVATY UNIFORMS ARE UNCONDITIONALLY GUARANTEED FOR FIT, QUALITY AND DELIVERY

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Marion County Fire Defense

STATE Fire Marshal E. A. "Chuck" Taylor of Salem, Oregon, has submitted an interesting 74-page, 4- by 5¼-in. booklet describing the mutual aid and civil defense move-up plan for Marion County, Oregon. The booklet, published by the Marion County Firemen's Association, is carried by all fire department officers of the County, and a copy is on each piece of apparatus.

It gives basic vital information for the fire department that may at some time have to take part in large-scale combined operations as in mutual aid or civil defense. The first page of the booklet lists the telephone numbers of the Oregon state police and the Marion County sheriff. Then there is a brief statement covering recommended radio procedures for all personnel that operate radio equipment in the County. In addition, there is a listing of all radio-equipped fire apparatus in the County.

There is a listing of apparatus to be used primarily for Civil Defense, description of the 11 available tank trucks of 750-gallon capacity or greater, and the 9 pieces of apparatus having foam equipment, a roster of the 11 fire departments that have geiger counters and monitors to be used in the vicinity of radioactive material and the 9 fire departments that have inhalators.

Altogether Marion County has 26 fire departments and 75 pieces of apparatus. Two or more pages are devoted to each fire department and include the name of the department, the chief officers, emergency phone numbers, assignments in mutual aid from the first through the fourth alarm, the number of men and the number of first-aid trained personnel in each department, and a thorough inventory of apparatus and equipment. The latter is particularly useful to officers in command at fires who need special equipment to do certain jobs.

A NEW Automatic Watch Dog for every citizen and resident of the U.S.A.

NOW MORADCO Makes the Conelrad Monitor Available to You!

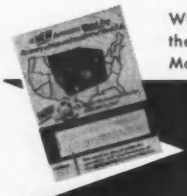
NEW CM3 CONELRAD MONITOR

Silently but Effectively Guards Your Safety 24 Hours a Day with VITAL Advance Information!

"In the event of *enemy attack* and *Emergency Weather Warnings* (hurricanes, tornados, floods, etc.), the 24-hour Weather Warning Station in your area will broadcast a special Conelrad Attention Signal that will activate an *Automatic Conelrad Alert Receiver.*"

Compact, attractive metal cabinet in manogany, African ivory, or gray hammertone finish. Powerful 6-tube Moradco Conelrad Monitor covers entire standard broadcast band, receives signals from 24-hour stations in your area.

PRICE... $39.95



WRITE for folder describing the Moradco CM3 Conelrad Monitor. No obligation.

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Battalion Chief Clark in New Training Post

BATTALION Chief William E. Clark, retired, of the New York City Fire Department, was recently appointed to be supervisor of firemanship training of the State of Wisconsin. Chief Clark topped the list of candidates taking the examination for the new post.

Chief Clark has had a long experience in fire service training, having taught at the New York City Fire College and served as instructor in Fire Company Administration at Queens College, New York City. He was also curriculum director for Middlesex County, Somerset County and Mid-Jersey Fire Schools in New Jersey. His latest assignment prior to going to Wisconsin was chief of the fire department for the Bakelite Company. The Wisconsin firemanship training program is being administered by the State Board of Vocational Education under the direction of Mr. C. L. Greiber. The current program was organized as a result of state legislation based on the recommendation of the Wisconsin Firemen's Association and was set up under the guidance of Mr. Thayer of the State Board of Vocational Education.

How to Test Hospital Operating Rooms

(*Continued from page 31*)

testing. Measurements are made at five or more locations in each room and the average of the readings has to be within the limits specified (25,000 ohms and 1 megohm) with no value greater than 5 megohms nor less than 10,000 ohms.

Furniture Testing

If conductive casters, tires, or leg tips are used, the resistance between the metallic frame of the furniture and a metallic plate placed under one supporting member but insulated from the floor shall not exceed 250,000 ohms, measured with an ohmmeter previously described.

All rubber sheeting, and the coverings of all operating tables and stretcher pads and of all pillows and cushions are to be fabricated from sheeting of conductive rubber or equivalent material. The resistance between two electrodes placed not more than three feet apart on the same surface and also on opposite surfaces of the sheeting or pad assembly must not exceed 500,000 ohms when measured with an ohmmeter of the type described previously.

Administration Responsibilities

Elimination of static charges is dependent on the vigilance of administrative personnel who purchase, supervise and inspect operating room materials. It cannot be too strongly emphasized that even a few unwise "precautions" are apt to increase the electrostatic hazard. For example: conductive flooring may be ineffective unless *all* personnel wear conductive shoes and unless *all* objects in the room are electrically continuous with the floor.

Routine Testing

Conductive footwear and other personnel-to-floor connective devices should be tested on the wearer each time they are worn. Testing is done with an approved resistance measuring device having a short-circuit current not exceeding 0.5 milliampere. The reading may be taken between two insulated, nonoxidizing metal plates located so that the wearer can stand in a normal manner with a foot on each, in which case the resistance must not exceed 1,000,000 ohms (1 megohm).

The resistance of conductive floors and conductive equipment must be initially tested prior to use. Thereafter measurements can be taken at intervals of not more than one month, with a permanent record of the readings being kept.

Ungrounded Electrical System

A conductive floor produces a definite shock hazard in the absence of an isolated electrical system. Accordingly, the isolating transformers must always be installed simultaneously with or prior to the installation of the conductive floor. Installation in the opposite sequence is dangerous and should not be contemplated.

Copies of the 1958 edition of "Recommended Safe Practice for Hospital Operating Rooms," NFPA No. 56, should be available in every fire department and used in conjunction with your hospital inspection program.

KOHLER ELECTRIC PLANTS

Portable power for rescue trucks, fire fighting and civil defense

Compact portable Kohler electric plants provide power for floodlights, power tools. Models for emergency service maintain alarm signals, communications, when normal power is cut off.

Civil defense units rely on Kohler plants for floodlights, power tools, amplifiers, sirens, mobile hospitals. Sizes: 500 watts to 100 KW gasoline, 10 KW to 100 KW diesel. Write for folder B-47.

MODEL 2.5M25, *2500 watts, 115 volt AC. Manual starting.*

See the Kohler exhibit at the **INTERNATIONAL ASSOCIATION OF FIRE CHIEFS CONVENTION** *Los Angeles, Sept. 15-18*

•

also at the **CIVIL DEFENSE CONFERENCE** *New York City, Sept. 9-12*

KOHLER CO. Established 1873 KOHLER, WIS.

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Enameled Iron and Vitreous China Plumbing Fixtures • Brass Fittings
Electric Plants • Air-cooled Engines • Precision Controls

Demonstrating Foot-Pounds of Lift

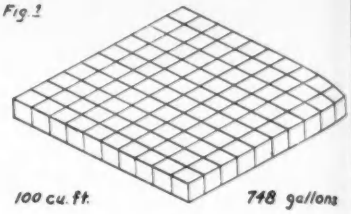
WE HAVE previously discussed the number of cubic feet of water that a 750 gpm pumper could lift to a given pressure head in feet. We reported that 750 gpm at 150 pounds per square inch is equivalent to lifting 100 cubic feet of water 346 feet, 525 gpm at 200 pounds is equivalent to lifting 70 cubic feet of water 462 feet, and 375 gpm at 200 pounds is equivalent to lifting 50 cubic feet of water 577 feet. (See Figures 1 and 2.)

Some fire fighters have trouble in understanding why a pump working at higher pressure does not discharge more water than one working at a lower pressure.

This is because of the amount of energy required to do a given amount of work. Most American centrifugal fire pumps have two impellers. When full volume is required, each impeller handles half of the water and provides the rated pressure. We have in effect two separate centrifugal pumps in the pump housing. Each is doing half of the work.

However, when extra high pressures are required (say 250 lbs. per square inch or more), we arrange the transfer or change-over valve to set up a relay pumping operation within our pump. Both impellers handle the same water and each provides half of the required pressure. Thus, it is physically impossible to increase the amount of water by stepping up the pressure when both impellers are working at capacity.

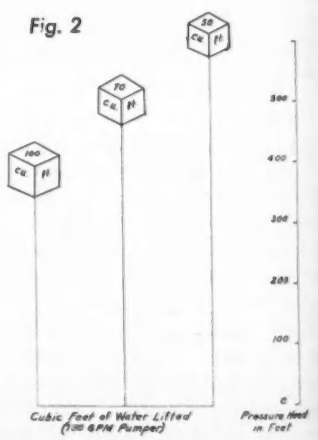
Fig. 1

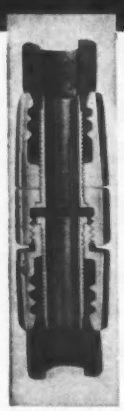


A simple way of demonstrating this in a firemen's training class is as follows. Take two 10-quart pails of water (each containing about 20 lbs. of water). Ask a fire fighter to lift one with each arm and place both pails on a table about 28 inches high. If each arm is considered as representing a pump impeller lifting water, he will be providing approximately a one-pound pressure head in elevating the water to the table (Fig. 3). The work required will be about 92 "foot-pounds." (33,000 foot-pounds per minute equals one "horsepower" of work energy, so it would be necessary for the man to repeat the operation 358 times a minute to equal one horsepower, an impossible and unreasonable task.)

Now we want to double the pressure head with the water in our pails. We will ask the man to place the pails of water on a bookcase or other object approximately 5 feet high which will give the water a two-pound pressure head.

Fig. 2





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1. FULL FLOW—no significant reduction of internal diameter. Pressure is assured.
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3. INTERNAL EXPANSION—prevents shrinkage of the hose at the coupling.
4. ACCURATELY MACHINED—always the same . . . interchangeable.
5. REMOUNTABLE—can be removed and re-attached with a key any number of times without cost.
6. WEIGHT—no heavier than comparable expansion type coupling.

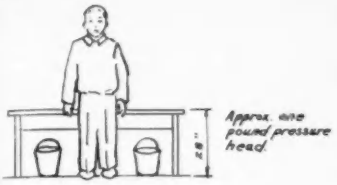
Successfully Tested To Bursting Point Of Double Jacket, Single Jacket And Sweat Hose

Recognizing the trend toward higher and higher pressures in fire fighting, Bar-Way has developed a revolutionary coupling that will withstand the pressure and the pull. This new coupling is designed to fire fighting specifications. It guarantees full flow, full pressure, it is streamlined to slip over obstructions, and it can be interchanged anywhere at any time without damage to either the tube or fabric. Specify Bar-Way! Write Bar-Way Mfg. Co., Stamford, Conn.

Available in polished bronze in both standard rocker and forestry lug. 1½" in production. Larger sizes will be available.

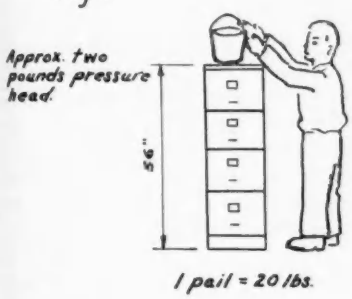
BAR-WAY MFG. CO., STAMFORD, CONN.

Fig. 3



We will instruct him to use both hands (representing the two pump impellers) to lift each pail in turn the double distance. We are reducing the amount of water that can be lifted in one minute, but are doubling the pressure head. We are lifting 20 pounds of water almost 5 feet and are doing almost 100 foot-pounds of work even though handling half as much water (Fig. 4). If we wanted to lift water still higher, say 7 feet, we would fill the pail only partly full because the higher lift would amount to more foot-pounds work unless we reduced the load.

Fig. 4



Officers of the IAFF

AT THE meeting of the International Association of Fire Fighters in Wichita, Kansas, last month, William D. Buck was elected to a two-year term as president of the International. He had been serving as acting president since the death of John P. Redmond in December, 1957.

John C. Kabachus of Boston, who had been serving as acting secretary-treasurer in the same period, also was elected to office for two years.

Vice presidents elected included James R. King, New York City; William H. McClennan, Boston, Massachusetts; E. C. Wilcox, Miami, Florida; Charles R. Chambers, Toronto, Ontario; Roy L. Perry, Birmingham, Alabama; and Andre Plante, Montreal, Quebec.

New Pumpers for Findlay, Ohio

Fire Chief Homer Johnson of Findlay recently accepted these 1,000 gpm Pirsch pumpers that feature 300 horsepower engines and six-man canopy cabs. The Fire Department is also anticipating two new fire stations for which money has been appropriated.

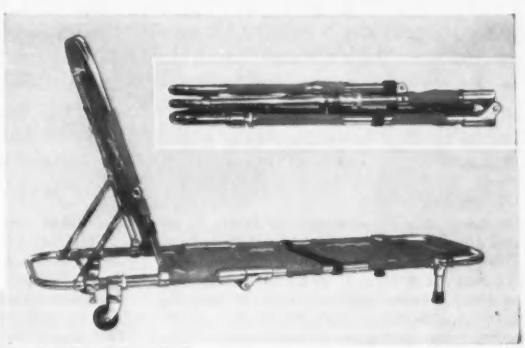
NEW
Washington Ambulance COT!!

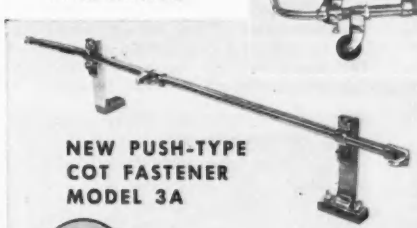
Now you can get an ambulance cot that is REALLY LOW — only 8¼ inches high — the perfect answer for cars that have less head room, and for overhanging stretchers. The new Washington model 21-L is of special value for heart cases, and other patients who must be kept in a sitting position. Washington's famous top-quality craftsmanship is apparent throughout this new model cot with such features as sturdy, rigid construction . . . highly polished aluminum tubing and castings . . . very lightweight yet strong . . . trigger release side rails . . . adjustable back rest with nine-position squeeze-lock adjustment. It always pays to choose Washington for the newest and best in all emergency room or vehicle requirements.

ADJUSTABLE-BACK EMERGENCY STRETCHER MODEL 9AB

Four adjustable positions on back rest, folds to only 4½ inches high! One of Washington's complete line of folding emergency stretchers for every need, in every price range.

See us at booth 5, I.A.F.C. Convention.





NEW PUSH-TYPE COT FASTENER MODEL 3A

This new and improved cot fastener holds cots securely in station wagons and other types of emergency vehicles. Washington makes four other models of cot fasteners, to meet every need for any kind of vehicle. Tell us the make and model of your vehicle, and we'll recommend suitable fasteners.

See your jobber or write for FREE catalog!

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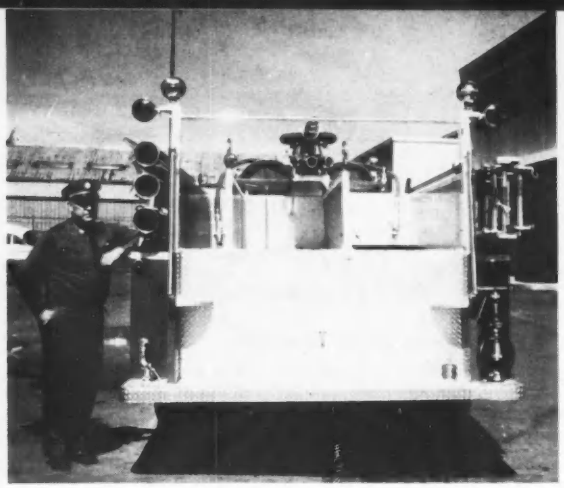


(Above) One of the 1958 pumpers built by the Rochester Fire Bureau. The "straw" color superstructure is not only striking in appearance but makes the apparatus more visible in traffic, particularly at night. Fourteen coats of lacquer are carefully applied in the modern shop.

(Left) Chief Vogt standing at the rear of the pumper in front of the shops. The divided hose body carries 1,200 ft. of 2½-in. hose which permits two lines to be laid simultaneously to heavy stream devices. The smaller compartment carries 400 ft. of 1½-in. hose.

Master Mechanic's "PERFECT" Pumper

WHAT would the "perfect" fire apparatus be like if it could be built just the way the fire fighter wants it? Perhaps the nearest answer to this question is found in the apparatus designed and built in the shops of the Rochester, New York, Bureau of Fire under the direction and supervision of Deputy Chief of Apparatus Louis E. Vogt, member of the NFPA Committee on Fire Department Equipment. Very few, if any, other fire departments in the United States have the facilities to say nothing of the necessary talent that would permit successful duplication of the program followed at Rochester under the administrative guidance of Safety Director Kenneth C. Townson and Fire Chief Walter Adams. Under this program the shops construct two new pumpers and other pieces of apparatus each year. This assures that none of the first line pumpers in service shall be more than ten years old. In addition, the department has 17 fully equipped modern pumpers in reserve, almost one for every engine company. This not only provides a reserve for use by off-duty men in emergencies but if for any reason the first line apparatus is out of service, as for example when undergoing periodic servicing at the shop, the crew merely moves to the reserve piece. General Townson reports that his military experience as a combat officer taught him "the second line equipment must be as good as the first," and he has carried this concept into the field of public safety.

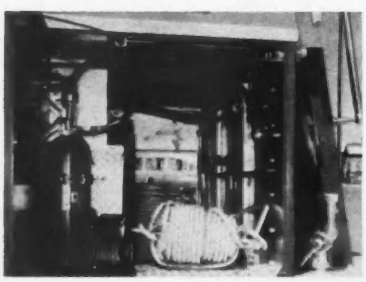
Only the aerial ladders are built by outside concerns, and the 11 Peter Pirsch aluminum aerial ladders in service are built to meet the Bureau's exacting requirements.

Previous issues of FIREMEN have described the facilities of the Rochester Fire Academy and Shops, which was a brain child of Chief Vogt brought into actuality by Commissioner Townson. Not only does the shop have facilities for body and parts fabricating and a complete paint shop, but there is a pump test room containing features designed by Chief Vogt that have since been copied by a number of commercial fire apparatus builders who on many occasions in the past have not been reluctant to adopt ideas developed at Rochester. Recently, as also reported in FIREMEN, Chief Vogt developed the first practical large capacity hydraulically operated aerial ladder pipe (now being marketed by Elkhart Brass) and an improved pressure governor for fire engines.

The Rochester fire apparatus is not the result of one man's ideas. The Executive Board of the Department under the direction of Chief Walter Adams and includ-

The operator's compartment beside the pump operating panel is a feature which reflects Chief Vogt's practical experience in operating pumpers at fires. All the tools which the operator needs, including hydrant wrench, spanners, wrenches, screw drivers and rubber mallet, are conveniently mounted in this lighted compartment. Note one of the convenient access panels through the body at the back of the compartment.

Generous sized equipment compartment across rear of apparatus ahead of rear step and under hose body. Extinguishers, ropes, fog applicators, forcible entry tools, suction strainer and other items are easily accessible in this generous well-lighted compartment. The Rockwood fog nozzle and applicators are standard on all Rochester pumpers.



All pump controls are conveniently grouped and arranged for ease of operation. Pressure gages show suction and discharge pressure and high pressure stage for the twin reels or small lines. The discharge controls govern the reels, 1½-in. outlets, and 2½-in. outlet to the rear. One feature of special importance is that the gated 2½-in. pump inlets feed directly to the large suction manifold avoiding the loss of efficiency so often encountered where 2½-in. inlets are connected by small tortuous piping. These pumps are equipped with the new type engine governor pressure regulator developed at Rochester.

ing Executive Deputy Chief John F. Hurley, and Chief of Training MacMillan as well as Chief Vogt meet to discuss and approve improved designs and modifications each year. The apparatus replacement is part of a long range capital improvement program which has the active support and advice of the Rochester Municipal Research Bureau. This program has also included completion of 10 new fire stations, and construction of several more stations will start during the current year. Already the Board is considering plans for next year's apparatus. One of the recommendations under consideration is provision of a single booster reel for the dual reels that have been traditional on Rochester pumpers. This would recognize the fact that 1½-in. hose is widely used at fires of the type that were formerly handled by two booster lines.

As would be expected of apparatus built under the direction of a fire department maintenance chief, the Rochester equipment is designed with simplicity of operation and maintenance in mind. Everything including the engine, pump, water tank and various connections are readily accessible for adjustment and repair. Removal of a few bolts or large access panels allow the repairmen to get at any part of the equipment in a few moments and encourages periodic inspection and maintenance.

The materials budget for building the two 1958 pumpers was approximately $35,000. The labor is all performed under Chief Vogt's direction by the carefully selected fire department shop personnel who perform all the equipment maintenance work of the department and build the apparatus as filler work throughout the year. Recently, the Fire Apparatus Manufacturers' Association Technical Committee consisting of the chief engineers of all of the leading fire apparatus builders met at the Rochester Fire Academy. After looking over the new apparatus a number inquired about the cost of marketing pumping apparatus involving such refinement of detail and perfection of workmanship as is insisted upon at Rochester. The consensus was that taking into account overhead such as plant facilities, sales cost and commissions, such pumpers could not be duplicated commercially for less than $40,000 to $50,000 which would make them unmarketable under competitive bidding.

Chief Vogt's long record of round-the-clock, seven-day-a-week devotion to his job and to the fire service in general was publicly recognized by the City of Rochester before thousands of persons attending the annual open house at the Fire Academy on Sunday, June 8, 1958, when under the direction of Commissioner Townson and Chief Adams, the Board of Merit decorated him for service beyond the call of duty.

It is not generally known that at one time Chief Vogt was the youngest volunteer fire chief in New York State when he helped organize and equip the suburban fire department at West Webster, New York. He built fire apparatus for that department and commercially for a number of fire departments in Monroe County before becoming superintendent of apparatus in Rochester in 1943. He continues to assist many volunteer fire departments with problems of apparatus design, maintenance and testing.

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Superior Workmanship

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Fig. 402
Portable INVINCIBLE Ladder Pipe

600 GPM or 1100 GPM—Operated by handle from ladder or by control rope from the ground.
Rung Pulley for ground control
Pipe Clamp

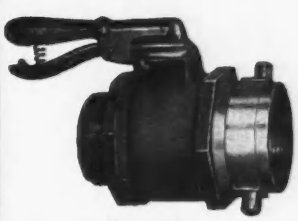

Fig. 163
Double Seat Hydrant Gate, either right hand or left hand. 2½" N.S.T. male x female.

Fig. 15953
Leader Line Gated Siamese, 2½" x 2–1½" outlets, full water way.

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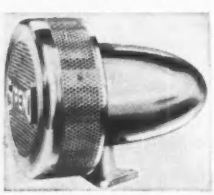

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Gaithersburg Does It Right!

IN THE 1957 NFPA Fire Prevention Contest the entry from the Gaithersburg, Maryland, Fire Department received honorable mention for municipalities in the population Class VII and tied for third in entries from the State of Maryland. Two sections of the Gaithersburg entry merited particular attention — one covering a survey of rural areas; the other reporting fire prevention and plant fire brigade training.

Last year the Fire Department, headed by Chief Byron H. Miller, decided to make an aerial survey of the area protected by the Department to locate rural water supply and access roads. Captain Donald Magruder, Privates Jack Fraley and Joseph Boland (pilot) and Ernest Gloyd assisted Chief Miller.

The team took aerial photographs of all streams, ponds and lakes, then after processing the film plotted these water sources on a map together with information on the estimated amount of water, the exact location and means of access. The map is used to familiarize fire fighters with the outlying areas and is kept in the dispatcher's office so that information can be sent by radio to fire companies responding to an alarm.

Members of the Gaithersburg Fire Department have assisted in the training of the fire brigades of two feed and grain mills in the community. In April last year the first class was started with 30 employees of the Bowman Brothers Mill fire brigade. With cooperation of Plant Manager Lawrence Loome and Plant Fire Chief Loy Yankey, fire training classes were held once each week for a period of nine weeks. Instruction was given by Secretary Napoli and Chief Inspector Thomas Slater of the Montgomery County Fire Marshal's Office.

The mills in Gaithersburg are set up as box alarms and on first alarm bring two one-piece engine companies and a two-piece engine company from Gaithersburg, three one-piece engine companies and a squad truck from nearby Rockville, two engine companies from Laytonsville, a 100-ft. aerial ladder from Kensington and an 85-ft. aerial ladder from Bethesda (the only paid department in the area). All of this apparatus is dispatched as soon as the first alarm hits. On second alarm an additional seven pieces of apparatus are dispatched from the various communities. On both first and second alarm assignments other fire companies move in to cover those dispatched.

Secretary Napoli reports that "the violation notices in this mill have been cut to half the former number since we started this fire brigade, and we believe this is due solely to the response to the educational program."

Private Jack Fraley, Captain Donald Magruder, Private Joseph Boland (pilot) and Chief Byron H. Miller of the Gaithersburg Fire Department shown with the plane which they used to make the aerial survey of rural areas.

Where Were You Then?

(Continued from page 20)

VOLUME 14 — 1947

February issue — Two multi-million dollar grain elevator fires in Minneapolis. Major factor was inadequate water supplies for private and public fire protection. . . . *June issue* — Report on Texas City disaster. 600 persons die and total damage amounts to estimated $50,000,000. Explosions of ammonium nitrate cargo on two ships kill all but one of local firemen. . . . *December issue* — New England swept by forest conflagrations that burn 200,000 acres of woodlands, 1,400 buildings. At least fifteen lives lost. Bar Harbor, Maine, has 70 estates, 170 dwellings, 4 hotels and 68 other buildings destroyed. Total loss in New England $32,000,000.

VOLUME 15 — 1948

November issue — 300th Anniversary of volunteer fire service in the United States brings issue of special stamp. Celebrated at Dover, Delaware, anniversary dates from appointment of fire wardens by Peter Stuyvesant in New Amsterdam, 1648.

VOLUME 16 — 1949

April issue — Charleston, West Virginia. 7 fire men die in mercantile building as floor collapses. . . . *July issue* — Inglewood, California. Hollywood Park Race Track burns for $5,000,000 loss as entire roof and superstructure is involved within 7 minutes. . . . *November issue* — Firemen haven't got a chance to save 140 lives on Great Lakes steamship S.S. *Noronic* docked at Toronto. Ship's construction not up to standards set by 1948 International Conference on Safety of Life at Sea.

VOLUME 17 — 1950

February issue — Report on Alaska's first mutual aid program that coordinates three major fire fighting organizations in the vicinity of Anchorage. . . . *April issue* — Dayton, Ohio. Clegg Building burns, resulting in loss of $291,000 and hospitalization of 48 firemen. . . . *November issue* — Providence, Rhode Island fire department makes major relocation of fire stations. 8 old stations kept, 9 new ones built.

VOLUME 18 — 1951

September issue — Kansas City, Missouri. Flood waters bring fire to numerous mercantile and industrial buildings as 6,000 gallon fuel oil tank strikes high tension power line, ignites and explodes. Fire burns for three days with damage estimated at $5,000,000. . . . *March issue* — S.S. *George Washington* burns at Baltimore pier bringing response of 35 engine companies, 8 truck companies, 4 fireboats and various special units. Replacement cost of pier estimated at $5,000,000 and replacement of the troopship at more than $15,000,000. . . . *November issue* — Brighton, New York. 11 houses explode and 28 other dwellings catch fire in series of gas explosions. Monroe County mutual aid plant put into operation effectively.

VOLUME 19 — 1952

February issue — Fargo, North Dakota. Fire department faces tough winter assignment in battling hotel blaze with temperature averaging 14.8 degrees below zero. Two women and one man lose lives despite strenuous rescue efforts. . . . *September issue* — Bakersfield, California, earthquake shakes butane tanks from their foundations and butane in liquid and gas form is ignited by sparks at electrical transformer station. 14 hours passed before fire is controlled. Damage estimated at $1,500,000.

VOLUME 20 — 1953

February issue — Rockland, Maine. Conflagration and 40 mph wind results as fires sweeps business district of Rockland, Maine. 14 buildings are destroyed including 22 stores, 2 hotels and a number of offices. Loss estimated at $1,250,000. . . . *April issue* — Fire Department Instructors' Conference celebrates Silver Anniversary in Memphis, Tennessee. . . *May issue* — U. S. Atomic Energy Commission pictures of A-bomb explosion show destruction of house 3,500 feet from bomb.

VOLUME 21 — 1954

February issue — Chicago, Illinois. Fire involves Reliance Hotel, 43 occupants rescued but fire fighters picking up equipment are caught when building collapses. Five firemen killed, 24 injured. Rescue operations in sub-zero temperatures. . . . *May issue* — Cheektowaga, New York. Fire flashes through school corridor and into music room containing 31 pupils, 2 teachers and a salesman. Most escaped by smashing windows with fists but 10 die of burns. . . . *December issue* — Philadelphia, Pennsylvania. Ten firemen killed when tank containing dry cleaning solvents explodes. 17 other firemen and 3 police are hospitalized.

VOLUME 22 — 1955

March issue — Chicago, Illinois. 29 men in "low class" hotel building die when rubbing alcohol ignites. Death toll was second to LaSalle Hotel fire of 1946. . . . *October issue* — New England. Hurricane rains fall on northeastern United States leading to floods and fire situations. 260 dead or missing, thousands homeless. Property damage estimated at 1.6 billion dollars. . . . *October issue* — Whiting, Indiana. Violent explosion in hydroformer of Standard Oil Company Refinery leads to damage estimated between 10 and 50 million dollars.

VOLUME 23 — 1956

March issue — Arundel Park, Maryland. 10 women die and hundreds of others are burned and injured when fire involves amusement hall. Failure to evacuate building immediately and failure to call fire department principal factors. . . . *August issue* — New York City, New York. More than 600 fire fighters spend two days trying to control blaze in Wanamaker Building. 150 injured. . . . *September issue* — Dumas, Texas. 19 fire fighters die when vapors from 500,000 gallons of pentane and hexane mixture escaped from ruptured spheroid tank at the McKee Refinery of the Shamrock Oil and Gas Corporation. Loss estimated at $500,000.

VOLUME 24 — 1957

January issue — New York City, New York. Brooklyn pier fire and explosion kills ten employees and spectators and injures 247. Property damage estimated at more than $15,000,000. Class A explosive was said to be stacked on the pier. . . . *February issue* — Hartford, Connecticut. Two major church fires on successive days result in loss estimated at more than $5,000,000.

VOLUME 25 — 1958

February issue — Beautiful Amoskeag steamer subject of first four-color picture on cover of FIREMEN magazine. . . . *March issue* — Significant report on new classification for portable fire extinguishers. . . . Critical problem of fire department manpower brings series of articles on this subject. . . . *September issue* — FIREMEN begins its 26th year.

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Built for the New York Fire Department, this Equitable built fireboat tender is one of the proven "Equity" crewboat hulls adapted for specialized duty. The boat is built to ABS approved plans.

The 51′ craft (3′9″ draft) is propelled by 2 diesel engines (300 hp. each) and has a speed of 24 mph.

She is capable of pumping 250 gpm, has an 80-gal. foam tank, pull motors, resuscitators and facilities for injured persons.

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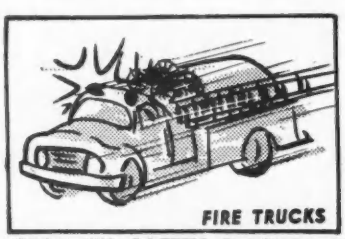

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Makes lights flash on-and-off. Used for flashing warning signals and directional signals. Continues to burn lamps with a steady light in event of failure. Available in 4 types. Will flash one, two, three, four or any combination of lamps up to 6 amperes without matching flasher to load. 6 and 12 volts.

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Building, Buying, Owning the Fire Safe Home (G32-A)	Free
Your Family and Fire (G-51)	Free

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Write for quantity prices

Philadelphia Fire Department in Movie

PHILADELPHIA and its fire department, five-time winner in NFPA's Fire Prevention Contest, is honored by a role in the exciting and unusual film "Windjammer" now playing to audiences in New York, Chicago and Los Angeles, and soon to be released in other large cities. Produced by Louis de Rochemont, famed for his March of Time films and for Cinerama, and filmed in the new "Cinemiracle" technique, the film depicts a recent round-the-world voyage of a Norwegian sailing ship. The ship, a training vessel, called at Philadelphia during Fire Prevention Week and Mr. de Rochemont, conscious of that city's outstanding accomplishment in this field, filmed a brief but breath-taking sequence of an actual alarm response and a fire department re-enactment of early fire protection in the hand-drawn pumper days. The cadets not only saw the local historic shrines, such as Independence Hall, but met Philadelphia's fire prevention leaders including NFPA Board Chairman T. S. Duke, and witnessed part of the program of Fire Prevention Week.

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Making the Most of a Fire Report

(*Continued from page 30*)

escaped down an outside fire escape. Firemen removed several guests with aerial ladders and checked upstairs rooms to be sure that everyone had escaped.

The fire spread through the undivided roof space and also entered and spread through the fifth story. Firemen attacked the fire both with hose lines dragged up through the building and with outside streams and except in one location were able to keep the fire from involving lower floors. The fire in the top of the building had been brought under control when it was discovered that flames had spread down through a vertical concealed space (created when the building was remodeled) and had gained considerable headway in the concealed space at the first and second story levels. Before the fire could break out of this space it was extinguished.

Naturally, other fire departments can use examples like the above to institute or improve local regulations and fire strategy.

What the NFPA Looks for in Fire Reports

The importance of these fire problems as shown by the reports will determine the course of action taken and amount of effort and money expended, by the NFPA and other interested parties, to solve these problems.

Every blank on the report form is important, but the following factors deserve special comment:

Spread of Fire: the paths by which fire spreads through a building and the materials on which the fire feeds are important. These data may indicate needed improvements in building design or construction material.

Failure of Private Fire Protection Equipment: experience with failures, no matter how minor, of sprinklers, alarms, fire doors and other special equipment is valuable in correcting and improving this equipment.

Difficulties in Public Fire Fighting: problems that fire departments have or are hampered by are worth mentioning. If departments on a nation-wide basis need more men the NFPA by the use of national publicity wants to make it easier for fire departments to get those men. Weather, water supplies and other factors should be mentioned if applicable.

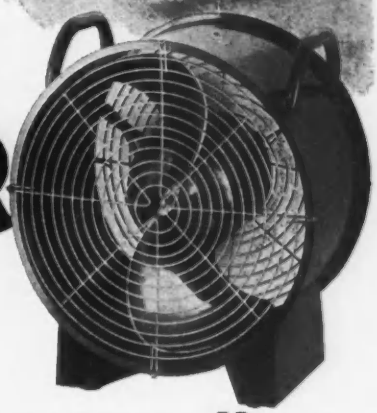
Special Problems Encountered: anything that is unusual or different about this fire. (Remember: If in doubt, send it in.)

The fire report is, then, an *important powerful* tool, which each fire department can use not only to its own advantage but to the advantage of every town, city and nation using NFPA material.

Get smoke out, get air in

with Multi-Purpose

SUPER VAC



CONTROLLED VENTILATION UNITS

NOT JUST A FAN... but a powerful vacuum-action air screw... Super Vac is amazingly simple in operation, made possible by the efficient design of the **powerful propeller** that is the heart of the unit. This patented propeller produces 100% pulling or blowing power over its entire surface.

Proved method of saving lives while also reducing smoke damage

Fire departments **nation-wide** attest to the speed with which Super Vac provides **controlled ventilation**... so necessary in modern fire fighting. This multi-purpose unit primarily (1) gets rid of smoke and fumes through its powerful vacuum action... or, (2) furnishes a tremendous blast of fresh air into the smoke-congested area, reducing the dangers of combustion and asphyxiation. Although one unit is often sufficient, **complete controlled ventilation** can be more speedily accomplished by using two or more units... one or more units **pulling out the smoke and fumes** while the remaining units **blow in a steady supply of fresh air.**

★ **Highly portable... operates in any position**
★ **Design permits vertical stacking**
★ **Made in 16" and 24" sizes**
★ **AC or DC, regular or explosion-proof motors**
★ **Choice of red or white baked enamel finish**
★ **Running board mounts available**

For complete details and specifications on

... contact your fire equipment dealer

... or write manufacturer

SUPER VACUUM

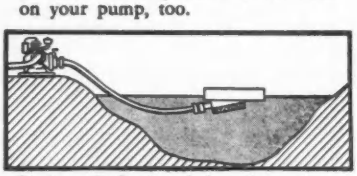
SUPER VACUUM MANUFAC JRING CO., Inc
319½ East Seventeenth Ave., Denver 3, Colorado

EVENTUALLY
YOU WILL TRY WET WATER...
WHY NOT START WITH
STEVENS' PENETRO-WET
& FIRE QUENCHER
THE SAFE WET WATER
Rust Preventative, Economical, Non-toxic, it Foams

S. G. STEVENS CO. 3859 Lockwood Ave. Toledo 12, Ohio

ANY WATER SOURCE NOW USEABLE!

The new Float Dock Strainer makes most any stream or pond useable for fighting rural fires or for filling your tanker. Float Dock will draft in deep or shallow water — off the bottom and drafting always the cleanest water with never a whirlpool or loss of suction at any time. Saves wear on your pump, too.



Strainer drafts just below the surface and down to the last few inches.

WRITE your distributor or manufacturer for brochure and prices. Specify hose size.

Manufactured Only By
FOL-DA-TANK COMPANY
Box 361, Rock Island, Illinois

BRAXMAR BADGES

Better today than ever before in our 79 years of fine badge making — better through employment of latest techniques plus greater experience. We offer the widest selection of badge design — all available in a wealth of excellent materials. Any badge you want can be had in nickel, chromium, rhodium, sterling silver, gold plate, perma-glo, gold filled and 14 kt. gold.

There is no substitute for top quality and experience and you get both at Braxmar.

Send for new price list and Diamond Jubilee Catalog.

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UNIFORM MARKING of INVALID HOMES

RED, BLACK AND GOLD

IDENTIFY HOMES OF BLIND, AGED AND INVALIDS WITH REFLECTIVE INTERNATIONAL FIRE FIGHTER EMBLEMS

Original Fridley, Minnesota Fire Department Plan

- 3-inch Emblems on Front and Rear Doors
- 2-inch Emblem on Inside Door to Invalid's Room
- Two 2-inch Emblems on Windows of Room

Adheres instantly and firmly to any clean, smooth surface without additional adhesive. Use inside or outdoors.

Adopted by the International Fire Chiefs' Association

Sets of 1 to 4 at $1.00 each, 5 to 9 at 90c, 10 to 50 at 85c

Write for quotation on quantity orders and brochure

B AND C PRODUCTS CO. 2227 Wilson St. N.E. Minneapolis 18, Minn.

1,000-Ton Titanium Blaze

(*Continued from page 32*)

lines averaging 75 psi. Frame dwelling houses on the avenue north of the fire were wet down and protected by two 2½-in. hose streams. Storage facilities of the Capitol City Lumber Company, 150 ft. south of the fire, were wet down and protected by two 1½-in. lines wyed off from a 2½-in. hose line laid into the premises. In the meantime, a detail under the command of a company officer was set up to patrol the area with apparatus against the possibility of flying sparks and debris. This detail concentrated on the east side among the 17 brick and frame dwellings facing the Suisman premises, about 325 ft. from the actual fire area.

Altogether 13 pumpers, 3 aerial ladder trucks and 9 chief officers operated at the fire with fire fighting personnel. A total of 10,500 ft. of 2½-in. hose, 400 ft. of 1½-in. hose and 150 ft. of 1-in. hose was used.

Investigation by the Fire Marshal's Office assisted by local police revealed that the fire had been set by three juvenile boys who were quickly apprehended. It has been estimated that the loss will approximate $25,000.

The firm of Suisman and Blumenthal, Inc., is generally considered as one of the larger scrap metal dealers in New England. This accumulation of scrap titanium alloy in such large storage was due to a low price market.

In the wake of this fire, fire officials have met with other municipal heads to review existing legislation and regulations governing the storage of combustible metals. (*For fire protection recommendations on magnesium and titanium see NFPA Standards No. 48 — "Magnesium" and No. 481 — "Titanium." Both are priced at 50 cents per copy.* — Ed.)

AEC Films

THE August issue of FIREMEN magazine stated that a film, "How Fires Start in Industry," was available from the U. S. Atomic Energy Commission, Oak Ridge, Tennessee. This film is not available for general distribution but is circulated only to plants of the AEC.

Fire School Dates

Arizona: Automatic Sprinkler Course will be featured at the 6th Annual Fire School, Phoenix College, Phoenix, Arizona, October 16–18. Write to Chief Jake Siken, Phoenix Fire Department.

Florida: Florida State Fire College will be held September 8–October 3. Write to W. H. Barnett, Superintendent, Florida State Fire College, Bos 785, Ocala, Florida.

Kansas: Kansas State Fire School will be held October 20–23 at the University of Kansas, Lawrence. Write to Director Clyde A. Babb, Kansas Fire School, 111 Fraser, Lawrence, Kansas.

Michigan: The annual state-wide Industrial Fire Control Seminar will be held at the University of Michigan, November 10–11. For details write to Francis A. Hartman, Supervisor, Firemanship Training Program, 1610 Washtenaw Avenue, Ann Arbor, Michigan.

More on Suction Inlets

In the August 1958 FIREMEN on page 23 under the heading "Using the Bean" we attempted to present a story of an intelligent pump operator who, by observing the pump residual gage, was able to supply a badly needed additional 2½-in. line from his pump by connecting to a gated pump inlet while all of the outlets were in use. Inadvertently the story was changed to indicate that the line was obtained from an additional pump outlet, which was not the case. The point was that well-trained and well-informed operators know that while the machine was delivering its rated capacity from the hydrant through discharge outlets, there was still plenty of water at good pressure coming in on the suction side and he used this in what amounted to using a stream at direct hydrant pressure without having to shut down either the pump or the hydrant.

SPARKY PLUSH DOLL

For your Fire Contest Prize or Gift

$5.95 add 60c insured shipping

Quantity prices on request.
(In Canada, double shipping charge)

Let Sparky help you sell fire safety to youngsters — and their folks! Rugged 22-inch quality doll with removable white shirt, tie, blue denims, red hat, boots.

Write for illustrated list of other Sparky products

ROBERTS CO.
Box 86B Wayland, Mass.

Eastman 3 way DELUGE GUN

NEW DIRECTIONAL HAND WHEEL CONTROL

The NEW HAND WHEEL CONTROL enables one man to operate the gun.
It will hold in any position.
EASY TO OPERATE — STURDY — SAFE
Send for complete information

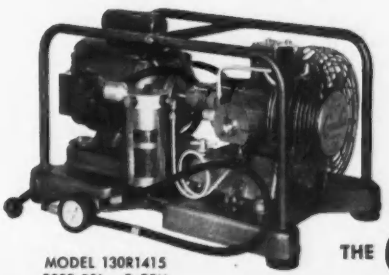
SAMUEL EASTMAN CO., INC.
CONCORD, NEW HAMPSHIRE

From one chief to another . . .

CHIEF WM. J. CAWKER
TOPEKA, KANSAS, SAYS:

"The Cornelius air compressor is a valuable asset to any fire department."

Chief Cawker reports: *"The City of Topeka moved to replace canister type masks with pure air masks in May, 1952. When the change-over was completed we solved the problem of a dependable supply of compressed air through the acquisition of a Cornelius Model 130R1415 high pressure air compressor. This cleared up any uncertainty of an adequate supply of clean air. This compressor is a valuable asset to any fire department."*



MODEL 130R1415
3000 PSI — 2 CFM
Weight complete — 95 lbs.

There is no substitute for an abundance of pure, fresh air for prompt, effective fire fighting. Write today for FREE Cornelius portable compressor catalog or call your fire equipment distributor for a demonstration.

See us in Booth #84
I.A.F.C. Convention
September 16–19.

THE Cornelius COMPANY
550 - 39th Avenue N.E. • Minneapolis 21, Minnesota

THE MILITARY AND CIVIL DEFENSE

IN THE May 1958 issue of FIREMEN magazine there appeared a brief item titled "Martial Law for Cities Hit by H-Bomb." For the most part this was reprinted from an Associated Press dispatch which quoted General Willard G. Wyman, head of the U. S. Continental Army Command, as saying that "the army plans to impose complete martial law on United States cities which have been hit by enemy bombs or missiles in any future war." This statement, attributed to General Wyman, brought prompt reaction, not only from readers of FIREMEN magazine but from civil defense directors and other persons concerned with the rights of the civilian public during wartime emergencies. Information submitted to NFPA points up the need for clarification of the army's role with civil defense organizations in case of enemy attack on the United States.

Mr. Thane M. Durey, special assistant to the President of the National Association of State and Territorial Civil Defense Directors, Madison, Wisconsin, in particular asked FIREMEN magazine to publish the following statement:

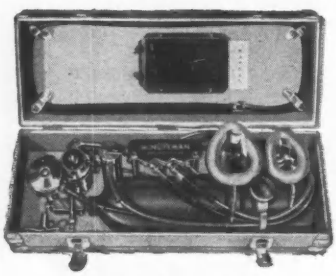
General Wyman's address was to assure civil defense leaders throughout the nation that, subject to the requirements of the primary military mission of our armed forces, they would furnish personnel, equipment and facilities to assist civil authority (civil defense) in meeting major emergencies and disasters. He further stated that, if requested by proper authority, that is, the governor of a state or his representative, the military under authority of the president or the secretary of defense would make available such units of the armed forces as could be assigned to such a task, for the purpose of maintaining law and order in cases where the local governmental agencies were so lacking in personnel and facilities from the effects of a disaster as to require military assistance until government officials or their successors could re-establish civil authority.

Other comments pertinent to the Army's role in case of enemy attack were issued by Lt. General C. R. Huebner, director of the New York State Civil Defense Commission, who said in part in a letter to local civil defense directors:

The United States Army plans to train its members in the art of assisting the civil authorities who might be in need of assistance as the result of enemy action in time of war. This assistance will be forthcoming only when requested by the governor of a state in need of such assistance, and when so ordered by the president. The assistance envisioned by the army is of two types: *First*, assisting civil authorities by making available resources not required for essential military tasks. *Second*, when civil authorities cannot handle the situation, as a result of enemy action, the military will take over controls for the rescue operations until civil government can be restored. In the second mission, the military will utilize all civil defense forces that remain and that are capable of assisting in the over-all rescue problem. All continental army commanders will maintain close liaison with civil defense authorities so that the operational plans of the state and local civil defense organizations are understood.

In weighing the possible action of the military in wartime emergencies several fundamentals should be considered. First there seems to be a general principle of law that the U. S. Army cannot declare martial law in any of the states. Such declaration must always be issued by the governor of the particular state. A second point to be considered is that the military is obliged to help civil authorities during wartime emergencies only to the extent of resources not committed to primary military missions.

For QUICK
Lifesaving Services
THE
STEPHENSON "MINUTEMAN" RESUSCITATOR



(Weighs only 30 pounds)

This lightweight, lifesaving device is especially designed for FAST application in all respiratory emergencies.
The newest rookie can start it breathing for the victim in seconds.
Its size and weight make it particularly desirable for use in:

Crash Trucks	Emergency Cars
Ambulances	Patrol Cars
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Write for FREE demonstration or pamphlet R-303

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"Makers of the Harger Drunkometer and Breathalyzer for determination of intoxication by analysis of breath."
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A third fundamental is that there are already in existence well-trained public service organizations such as fire departments, police departments and civil defense units. In any emergency it would be far more practical for the military to utilize these existing organizations rather than to substitute military teams or units. What is essential, of course, is that the fire departments and civil defense units in each state get together and decide upon a "chain of command" so that if bombing or other serious wartime emergency occurred the military would know which persons to contact to obtain the most efficient operations from the civilian units.

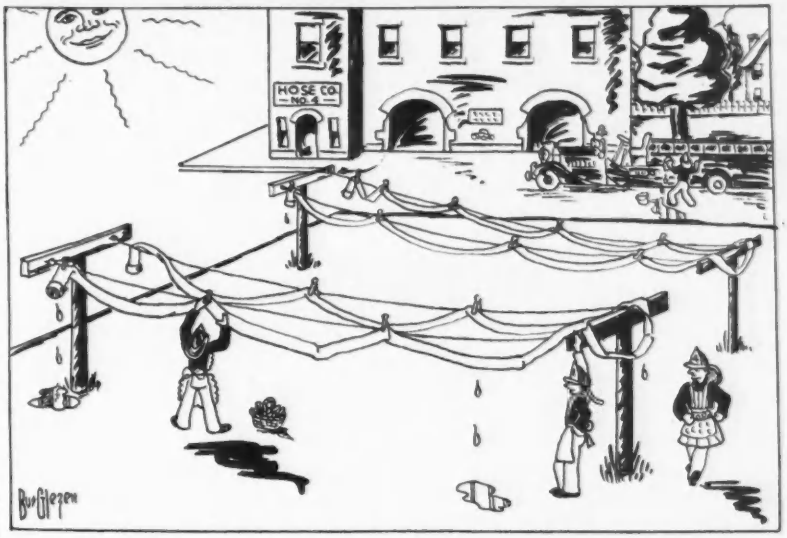
As far as the fire service is concerned, it is essential that certain key fire chiefs in each state be prepared to perform command functions for large areas, that is to supervise and coordinate the actions of a number of fire departments so that there will be the least confusion with civil defense and military operations. It is important for state and county fire chiefs' associations to have an understanding of this problem, perhaps electing the key chiefs who would be capable of performing these vital command functions.

In California, New York and Oregon the fire service units have already organized in this respect, but in a number of other states much has to be done. In emergencies, the fire service should be able to say to the military and civil defense leaders "Here's our fire department operational plan for this state (or area). These chiefs are the key commanders. What do you want us to do?"

It is much more practical for the fire service to establish such organization now, so that fire departments will be directed and controlled by fire officers, rather than waiting for emergencies to come when lack of organization and preparation might place such direction and control in the hands of military and civil defense "amateurs."

NFPA member fire departments order an average of ten (10) subscriptions to FIREMEN Magazine.
How many subscriptions is your department ordering?

Our DON'T-DO-IT-YOURSELF Series — No. 1



Quaint, isn't it? . . . Shu-u-u-r-r-e, it is . . . but not more quaint than the "horse-and-buggy" ideas that condemned good hose to an early death-by-hanging (in a tower) or by baking-in-the sun.

Now . . . let's take a look at the contented firemen in the picture below. *Their* "Fringe Benefits" include *CIRCUL-AIR* . . . the safest, fastest, easiest-to-use Dryer that *revolutionized Fire Station Design.*

CIRCUL-AIR

The ORIGINAL
Electric Hose Dryer

- Eliminates Ugly Hose Towers
- Dries Hose in a Few Hours
- Dries Fire Clothing, Too
- Keeps ALL Hose in Service
- Reduces New Station Costs

UL LABORATORIES APPROVED FM

***Rota-Jet* "Automatic" HOSE WASHER**
SCRUBS—RINSES—DRAINS

- Hose is Self-propelled
- Washes Uniformly With or Without Detergents
- Drains Hose Linings, Too
- One-man Operation
- Even Washes the Edges

OVER 5000 Fire Departments
Now CIRCUL-AIR Their Hose

Write NOW for latest descriptive literature on Hose Washers, Dryers, Storage Racks; also for New Treatise "Selection and Care of Fire Hose"

THE CIRCUL-AIR CORPORATION 575 EAST MILWAUKEE DETROIT 2, MICHIGAN

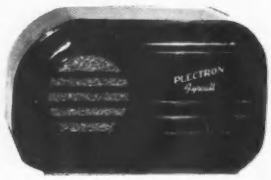
Enter THE TONE AGE

with a PLECTRON Alerting System

Siren alarms have become obsolete because of tighter houses, television noise, and expanding fire districts. Equip each volunteer and professional with an economical PLECTRON Fyrcall Radio Receiver and realize the benefits of a Modern Alarm System.

CRYSTAL CONTROLLED

TONE ACTIVATED



INSTANT ALARM

SILENT STANDBY

VOICE MESSAGE

ECONOMICAL

Transmit from your present fire or police F. M. radio base station. Receivers are "turned on" by a tone (an excellent alarm) which is followed by the voice message.

- **For Assigned Frequencies in the 30-50 and 152-174 MC Bands**
- **Available for Any Tone Frequency from 1000-3000 C.P.S.**
- **Thousands in Use by Departments Throughout the U. S.**
- **New Tone Circuit Eliminates "False" Activation**
- **6 Tubes and Rectifier, Low Power Consumption**
- **3 Mile Range — Without Outside Antenna**

Look for Our Booth at the International at Los Angeles in September.

For Complete Information Please Write To:

PLECTRON CORPORATION, Overton, Nebraska

THE BURNS TOOL

A FIRE FIGHTER'S STURDY, MULTI-PURPOSE INSTRUMENT

- Pliers
- Gas shutoff
- Booster spanner wrench
- Screwdriver
- Standard spanner wrench
- Hammer
- Pry bar
- Hydrant wrench
- Clip for holding handles closed
- Small groove for pulling nails, etc.

Now available is one device which takes over the job of many. Invented by a fireman, the BURNS TOOL is specifically designed to enable every fireman to carry on his person the basic "tools of the trade."

Lightweight, compact and handy best describes this revolutionary device.

The BURNS TOOL is made of Lakite (pearlitic malleable iron), 12½ inches long, weighs 24 ounces and is cadmium plated. It can be carried conveniently in a fireman's coat pocket or on the rig.

Basically a spanner and hydrant wrench, this modernized instrument will be tailored to fit any hydrant nut. Where an established wrench nut is in use, forward with your order a wrench nut size or template.

Priced at only $6.95, the BURNS TOOL will readily become an asset to any fire department. Check the features, then for prompt delivery or information write to:

BURNS TOOL CO. 1526 LUCIA AVENUE WAUKEGAN, ILLINOIS

Dealer inquiries invited

Membership Report

TO THE fire chiefs reading this issue who do not retain membership in the NFPA for their departments, we make one more request. Look over the typical fire departments listed below, all of whom are now receiving the benefits of NFPA membership. Then ask a few of your officers and men to read this issue of FIREMEN and decide whether they would like to receive the magazine each month. If they agree, all you have to do is fill out the special blank on page 17 and mail it to NFPA. We hope to see your name or your department's name in this column in another month or so!

NFPA Welcomes the following chiefs and fire departments who recently have joined the Association. To date 2,443 fire departments are members of NFPA with 24,508 fire fighters receiving FIREMEN.

California: Encinitas Local Fire District, Encinitas.

Connecticut: Madison Hose Company No. 1, Inc., Madison.

Kansas: Syracuse Fire Department, Syracuse.

Louisiana: Patterson Volunteer Fire Department, Patterson; Westwego Volunteer Fire Company, No. 1, Westwego.

Maryland: Gaithersburg Washington Grove Fire Department, Inc., Gaithersburg.

Michigan: Ferndale Fire Department, Ferndale 20; Taylor Township Fire Department, Taylor Center.

Nebraska: Scottsbluff Fire Department, Scottsbluff.

New Hampshire: Gilsum Fire Department, Gilsum.

New Jersey: Township of Caldwell Fire Department, Caldwell Township.

New Mexico: Chief A. L. Conner, Hobbs Fire Department, Hobbs.

New York: Ithaca Fire Department, Ithaca.

Ohio: Richland Area Fire Brigade, Athens.

Oklahoma: Chief M. W. Johnson, Midwest City Fire Department, Midwest City; Norman Fire Department, Norman; Wewoka Fire Department, Wewoka.

Pennsylvania: Chippewa Township Volunteer Fire Department, Beaver Falls.

Tennessee: Sevierville Volunteer Fire Department, Sevierville; Tiptonville Fire Department, Tiptonville.

Wisconsin: Township Fire Department, Inc., Eau Claire; Radisson Volunteer Fire Department, Inc., Radisson.

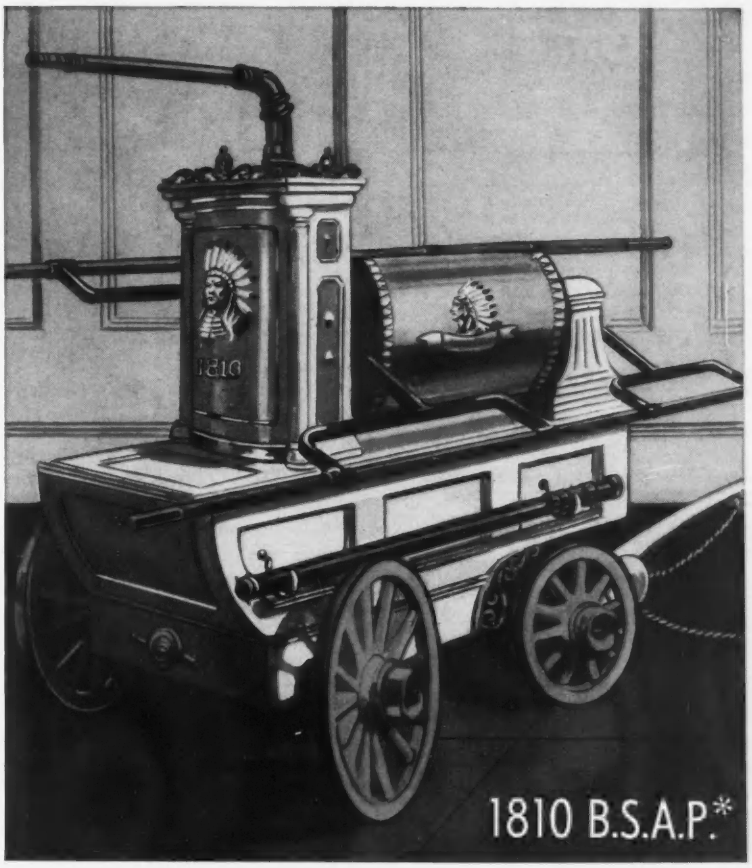
Scholarship Awards in Chicago

RECENTLY four high school scholarships were awarded by the American Legion Firemen's Post 667 and the Fire Fans Association, both of Chicago. The four scholarships were given to children of members of the Chicago Fire Department, and a fifth scholarship went to Donna Murray, daughter of James Murray, deceased engineer of Engine Company 28.

The 1958 scholarships were the tenth annual awards in the series under the sponsorship of the Firemen's Post. The program was inaugurated by Chief James F. Lahey, Sixth Division marshal of the Chicago Fire Department and since its establishment has provided scholarship awards to 42 children. At present 17 Chicago boys and girls are completing their high school education through grants from the funds collected by the Post. One special scholarship was provided in memory of Sanger Schuhmann by his widow when a tie developed in 1954. Mr. Schuhmann was a Chicago fireman for a few months in his youth and remained a friend of the Department until his death.

Winners are chosen on the basis of competitive examinations conducted by the faculty of St. Mel's High School. Each scholarship, worth approximately $700, may be used for tuition by students at private or religious schools or for other school expense by students who attend public schools. This year's awards followed ceremonies at Resurrection Church by the Rt. Rev. William J. Gorman, chaplain of the Chicago Fire Department.

"A match? Don't you think you've had enough for one day?"



WHEN BREATHING PROTECTION EQUIPMENT *Was a Wet Blanket!*

Back in 1810, fire engines, like the man-powered job shown above, were only a short step ahead of the bucket brigade. Then, breathing protection equipment was a piece of wet blanket wrapped around the head, over nose and mouth.

Today's modern fire fighting methods include the lifesaving Scott Air-Pak that enables fire fighters to enter dense smoke and chemical fumes with complete breathing safety. The new Scottoramic Mask increases confidence. It affords unlimited vision in all directions to help firefighters keep out of danger zones.

The Scott Air-Pak uses only pure, fresh air, therefore maintenance cost is exceedingly low as compared to other types of breathing equipment. Scott Air-Paks give the greatest protection at the lowest cost.

*Before Scott Air-Paks

SINCE 1932 Scott FOR SAFETY—FOR SERVICE

Learn all the facts. Write us today, or contact your nearest Scott distributor.

Safety Equipment Division

SCOTT AVIATION CORP.

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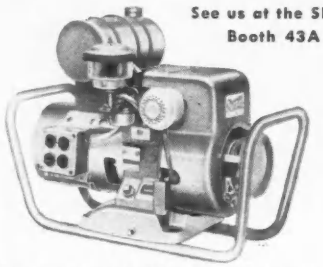
Booth 43A



Carrying frame model—*Lightweight tubular aluminum frame for one or two-man carrying. Easily lifted in and out of pickup or around on the job site.*

Dolly-mounted model—*One man wheels it anywhere. Specially useful on such jobs as hedge trimming, grass clipping, construction. Big, easy rolling rubber tired wheels.*

New 1500 watt D.C. Onan Electric Plant

Here's more efficient portable power for all 115-volt D.C. and universal motors or tools and equipment. This new Onan power package, Model 115AK-115M, gives you more power per pound of electric plant, more power per gallon of gasoline. Recommended specially for turf maintenance, emergency rescue service, and fire department use.

Direct-connected, compact design

Rugged, single-cylinder, 4-cycle, Onan air-cooled engine starts quickly in any weather. Heavy-duty splash-proof generator is direct-connected to engine, making a rigid, compact, long-life unit. Standard equipment includes manual starter, oil-bath air cleaner and 4 plug-in receptacles. Carrying frame, 2-wheel dolly and recoil starter are optional at low cost.

Standard Model *For installation in maintenance trucks, on fire rigs etc. Converts to portable model with carrying frame or dolly.*

See your Onan distributor or write for information

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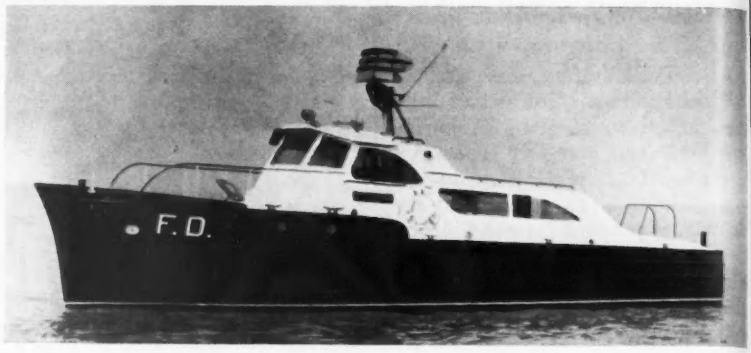
Minneapolis 14, Minnesota



New Fireboat for New York

NEW YORK CITY recently placed in service this new fireboat *Smoke II*, an all-steel diesel-propelled light draft fireboat and personnel carrier. Built by Equitable Equipment Company of New Orleans, Louisiana, the craft can carry 20 firemen seated in the cabin or a maximum of 40 to assist the crews of regular fireboats at waterfront fires. It can also bring relief crews for fires on vessels in the harbor or on the New Jersey waterfront. The new craft can travel at 24 mph and has a shallow 3-ft., 9-in. draft. It is equipped with a 250 gpm pump and a mechanical foam system with 80 gallons of liquid foam. It is powered by two General Motors Series 6–110 (300 hp. each) diesel engine and has special radar equipment to facilitate operations in smoke and fog. The fireboat was built on a standard "Equity" crewboat frame and adapted to specifications of the New York City Fire Department.

1958 Municipal Year Book

THE 1958 Municipal Year Book is 608 pages, cloth bound, and may be purchased for $10.00 from the publishers, the International City Managers' Association, 1313 East 60th Street, Chicago, Illinois. It contains over 40 pages devoted to fire administration and fire department statistics as well as a directory including names of fire chiefs and other city officials in cities over 10,000 population. Fire department statistics include data on the number of fire department salaries and fire department expenses. The number and types of fire equipment in service in individual cities are shown as are fire losses and number of building fires for cities of over 25,000 population. Also given are the fire insurance classifications of cities both individually and by population groups. Cities that have had a change of insurance classification are itemized. New books and pamphlets and standard references and periodicals in the fire field are listed.

A permanent record of honor and service in enduring bronze

There is no finer way . . . to pay permanent honor . . . than an everlasting record in a dignified International Bronze plaque.

Write today for our beautifully illustrated Brochure A . . . showing hundreds of original ideas for reasonably priced solid bronze plaques, honor rolls, memorials, awards, testimonials, commemorative tablets. For trophy, medal, cup ideas, write for Brochure B. Dept. 67.

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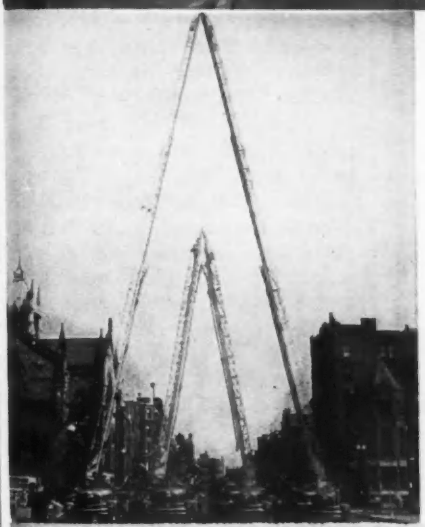
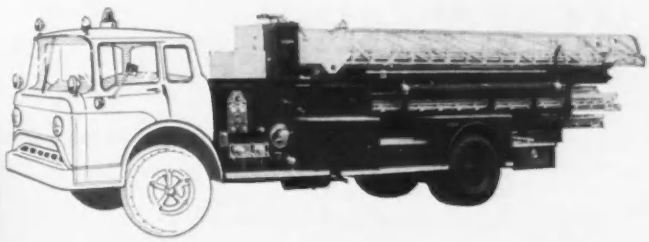
Now is the time to order FIREMEN magazine for all of your fire fighters! Join NFPA!



Now your choice of construction in SEAGRAVE Aerial Ladders

You select the chassis. . . . It can be either a regular Seagrave or a commercial truck chassis. . . . You select the Seagrave Aerial Ladder for the chassis. . . . Seagrave gives you the choice of a specially designed aerial ladder for commercial chassis or the Standard Custom-Built Seagrave Ladder. . . . Both of these ladders are ALL SEAGRAVE and have proven themselves by years of service in cities throughout the United States and Canada. . . . Seagrave is the only fire apparatus manufacturer that gives you this choice of aerial ladders.

Seagrave Standard Custom Aerial Ladder built on a tilt-cab chassis will be on exhibition at the International Association of Fire Chiefs Convention.



The Seagrave Corporation, Columbus, Ohio
King-Seagrave Ltd., Woodstock, Ont.

MAIL THIS COUPON

SEAGRAVE – THE GREATEST NAME IN FIRE APPARATUS

THE SEAGRAVE CORPORATION,
Columbus 7, Ohio

Please send me complete information on the following:

☐ SEAGRAVE AERIAL LADDERS

☐ OR .....

USE THE ABOVE LINE FOR SPECIAL INFORMATION CONCERNING SEAGRAVE FIRE APPARATUS.

Name .....

Title .....

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F.M. 9-58

CAIRNS HELMETS

THE FIREMAN'S
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SINCE 1836

NO. 5A — "NEW YORKER"
(Leather)
AMERICA'S "REGULATION" STANDARD

No. 350 — "SENATOR"
(Aluminum)

No. 900 — "CLIFTON"
(Flint-Flex Plastic)

In addition to the "regulation" models shown above, we manufacture other helmets, in drop-brim and other styles, in leather, aluminum and plastic, at prices to fit all budgets.

SEE OUR EXHIBIT, BOOTH 53,
LOS ANGELES CONVENTION.

We can supply everything the fireman needs for his personal equipment — as well as Secretary's Record Books, Loose-Leaf Fire Record Books, and Secretary's Blank Forms. Ask for Catalog 350.

"NO PRICE IS TOO HIGH
TO PAY FOR SAFETY"

CAIRNS & BRO., Inc. — Allwood, Clifton, N. J.

FIREMEN Reprints

FIRE service members have shown considerable interest in three articles which appeared recently in FIREMEN magazine. These are now available for distribution to all fire departments and industrial fire brigades.

F25–2 — "The Classification of Portable Fire Extinguishers," which appeared in the March issue of FIREMEN, describes the new Underwriters' Laboratories system of rating portable fire extinguishers. This reprint will be of interest to all fire fighters and industrial fire brigade members and will be an important part of firemen's training sessions. Copies of the 8½- by 11-in., 4-page reprint are priced at 25 cents each.

F25–4 — "Working with the Ladder Company" is a compilation of a series of articles which appeared in FIREMEN earlier this year. It points up the significance of a ladder company in municipal fire fighting operations and describes effective practices and administration of a ladder company. The 6- by 9-in., 8-page reprints are 35 cents each.

F25–5 — "What about Manpower" consists of a series published in FIREMEN November, 1957 through March, 1958, written by Editor Warren Y. Kimball. The first section of the reprint deals with the reasons for undermanned companies and what can be done about the problem. The second section concerns "A Manpower Utilization Problem" and describes proper manpower and apparatus distribution in small cities outside the high value districts. This 6- by 9-in., 16-page reprint is available for 50 cents each.

Order your reprints from the NFPA Publications Department, 60 Batterymarch Street, Boston 10, Massachusetts. Discounts are allowed for quantity purchases.

POSITIONS WANTED

Fire Chiefs **Safety Directors**
Training Directors

Fire chiefs, New York City Fire Department, 20 years' experience and study in fire prevention, fire protection, fire fighting, safety supervision, engineering, civil defense, radiation engineering, teaching and training, investigation, personnel management and administration. Average age — 46 years, college graduates, willing to travel and relocate, desire challenging positions. Send replies to: New York City Fire Chiefs Association, Personnel Placement Committee, Box F, 1675 University Avenue, Bronx 53, New York.

Fire Brigades and Mobs

Comments on handling civil disturbances. Reprinted from the British journal "Fire Protection Review."

DURING civil disturbances, fire brigades are of value to security forces when mobs endeavor to defy law and order Mob control has always been a major problem in countries where there are racial or religious differences, and this problem has increased a hundredfold since recent wars created waves of nationalism among backward people who need gradual leadership towards self-government. All civil governments forbid people to collect in times of excitement, but the trouble is to enforce this order. An unlawful assembly invariably has a common objective and, in pursuance of this, any large collection of people will quickly develop a composite mind, surrendering their individuality to a leader. The result is mass hysteria and, once this develops, people may commit acts of extreme violence.

The Police Journal under "New Aspects of Mob Dispersal," said in July, 1957: "During disturbances and against hostile crowds the police often use fire hoses to clear the streets and establish order. Experiments made in Germany show that it is better to project foam rather than water. Only one-sixth as much water is necessary and the psychological effect is much greater. The foam is visible for a longer time on the clothes. The substance dissolved in water is called 'tutigen N,' is harmless and can be got rid of by washing. The most important phrase in this quotation is that *the psychological effect is . . . greater*. If rioters can be made to look ridiculous and feel uncomfortable by being covered from head to foot in foam, dispersal of such a crowd is so much easier for the security forces.

"Tutigen N" is the trade name of an ordinary hydrolyzed protein type of air foam compound manufactured in Germany, and is equivalent to the corresponding British air foam compounds.

Nu-Swift Ltd produce a two-gallon air foam extinguisher suitable for crowd dispersal. Unlike the present foam compound used by the Fire Service in the UK, which stains and has an unpleasant smell, this air foam is harmless to human beings and will neither rot nor corrode fabric or material. A slight stain may be left on porous material. It is easily washed off, however.

"If foam is used against a hostile crowd," says Superintendent T. J. Clogger, of the Provincial Police H. Q., Tanga, Tanganyika, East Africa, "it is essential that the foam operators are protected against brickbats, and, for this purpose, I recommend a light shield of five-ply or corrugated iron with apertures for the nozzles. This will afford some measure of security and, of course, helmets should always be worn."

Hose itself is crack-resistant, non-acid-forming, leakproof synthetic rubber.
Double-layer jacket; inner layer cotton, and edges of outer layer 100% DACRON for maximum resistance to wear and mildew.
DACRON at the vital folding edges keeps these areas "alive" even after prolonged storage.

QUAKER TUFF-EDGE® HOSE

folds flatter without cracking

Even under constant flexing and tight packing—the hardest wear you can give any fire hose—TUFF-EDGE* by Quaker stands up far longer than former high-quality cotton-jacket hoses. Longer life, 15% less weight, and far less bulk are natural results of the synthetic-fiber edge construction of TUFF-EDGE. Since TUFF-EDGE folds flatter in trucks and on reels, more hose fits in less space, without cracking in the creases.

Mildew, occurring in folds which have not completely dried, causes fast deterioration. The extra-fast drying and mildew-resistance of the polyester-filament edges of TUFF-EDGE means greater flexibility and longer life for the hose. 50-ft. lengths; 1½" and 2½" diameters; brass expansion-ring couplings.

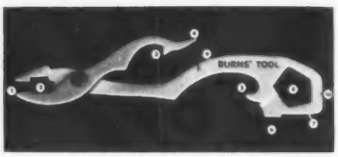
For complete information, write today to *Quaker Rubber Division, H.K. Porter Company, Inc., Phila. 24, Pa., or Pittsburg, California.*

*PATENT NUMBER 2,833,313

H. K. PORTER COMPANY, INC.

QUAKER RUBBER DIVISION

this month's EQUIPMENT NEWS



Handy Burns Tool Has Multiple Uses

A practical Waukegan, Illinois, fireman has invented the multiple-use Burns Tool, a combination spanner and hydrant wrench with pliers on one end. Weighing 24 ounces and 12½ inches in length, only 2 inches longer than a standard spanner wrench, this tool easily fits into a fireman's coat pocket. Uses for this modernized wrench are listed as a pry bar, pliers, screwdriver, booster spanner, gas shutoff, nail puller and hammer. Write to *Burns Tool Company, 1526 Lucia Avenue, Waukegan, Illinois.*

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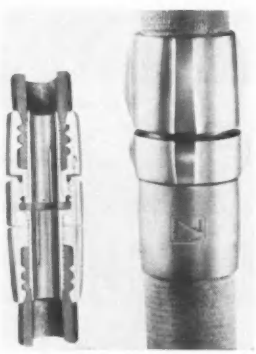
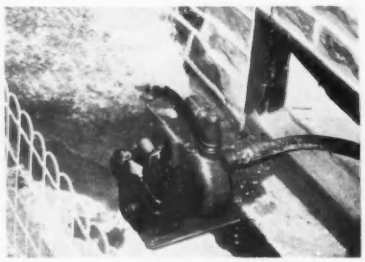


New Hose Coupling

Bar-Way Manufacturing Company, 2770 Summer Street, Stamford, Connecticut, announces new couplings streamlined to slip over obstructions, built to withstand pressures well beyond the bursting point of the latest fabric fire hose, and easily attached in the field by using a simple key, according to the manufacturer.

•

Use the magic of Walt Disney's name to boost public interest in fire prevention! Jiminy Cricket entertains and teaches in eight-minute technicolor films "I'm No Fool with Fire" and "How to Have an Accident in the Home." Prints available under six-year lease/purchase or $100 each to non-profit groups. Write to *Walt Disney Productions*, 16MM Division, 2400 West Alameda Avenue, Burbank, California, or 477 Madison Avenue, New York 22, New York.



New Hale "Torrent" Valuable Goodwill Builder

The new *Hale* "Torrent" portable pump has already proved its value to numerous fire departments across the country. Spring Mill Fire Co. No. 1, Conshohocken, Pennsylvania, reports their ladies' auxiliary donated a second "Torrent" after pumping out 17 cellars recently with the first pump. Are you ready for flood emergency work?

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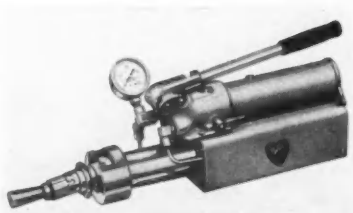


Los Angeles Convention to See Elkhart Han-Draulic Expander

Among the new products to be shown in the *Elkhart Brass Manufacturing Company* booth at the IAFC Convention in Los Angeles this month will be Elkhart's new Han-Draulic Expander. Actual demonstrations will be held. Elkhart will also show their "Elk-Vogt Remote" hydraulic remote-controlled ladder pipe, their new BG 104 Water Thief and a new item to be first shown at Los Angeles.

•

Do you have a smoke ejector or are you thinking of getting one? Be sure to ask for a free copy of the Super Vac how-to-use booklet. Write to *Super Vacuum Manufacturing Company, Inc.*, 319½ East 17th Avenue, Denver 3, Colorado. . . . "How to Select a Portable Handlight to Fit Your Needs" booklet is yours for the asking from *Koehler Manufacturing Company*, Marlboro, Massachusetts. . . . *New Jersey Fire Alarm Company* and *Newark District Telegraph Company* have merged into one organization to perform complete central office supervisory services within a 20-mile radius of their new office at 372 Plane Street, Newark 2, New Jersey.

Personnel Changes and New Products at Akron

Several recent appointments, promotions and new product developments are announced by *Akron Brass Manufacturing Company, Wooster, Ohio.*

Harold Strain, formerly sales manager for American LaFrance Corporation, has joined Akron as vice president and sales promotion manager. Ray Kubec, formerly general sales manager, becomes vice president and director of sales. David Mosely has been promoted to sales manager. Akron Brass has recently been appointed sole international distributor for UNOX foam, a product of Union Carbide Corporation.

Newly designed products to see at the Akron booth at Los Angeles are:

(1) New foam and wet water INDUCTORS, providing correct proportioning, by a simple setting of a dial, plus easy-to-see metering valve, for wet water, wet water foam and 3 and 6 percent concentration of liquid foam.

(2) New IMPERIAL hand line nozzles in 1-in, 1½-in. and 2½-in. sizes. Now you can get constant flows at various fog and straight stream settings making it possible to use constant pump pressures. By depressing and half turning the nozzle baffle, you quickly adjust the flow of nozzles.

(3) New GISMO, a compact shut-off valve to be attached below the nozzle or anywhere in the hose line. Now you can shut off the flow when the line is being extended without going back to the pump.

(4) New DUBL-TUFF foam nozzle with double-bounce jets which inject air twice for better foam.

(*Continued on page 73*)

Armed

for your complete

fire protection!

These famous brands, consolidated under a single organization, comprise the most complete line of fire protection products and services ever offered. Representatives of each of these brands are armed with dependable equipment, application experience and professional services to guard you against every fire hazard.

This high-quality, competitively-priced equipment includes approved fire extinguishers; automatic sprinkler systems; carbon dioxide, dry chemical and foam systems; fire hose, nozzles and couplings; industrial and municipal fire alarm systems; and accessory fire department supplies including ladders, sirens, clothing, breathing apparatus, first aid kits, etc.

Look for these famous brand names, sold through fire equipment specialty firms and leading industrial distributors. Consult the yellow pages of your telephone directory under "Fire Protection Equipment."

Visit Booths 32 and 33 at the Fire Chiefs' Convention

THE FYR-FYTER COMPANY

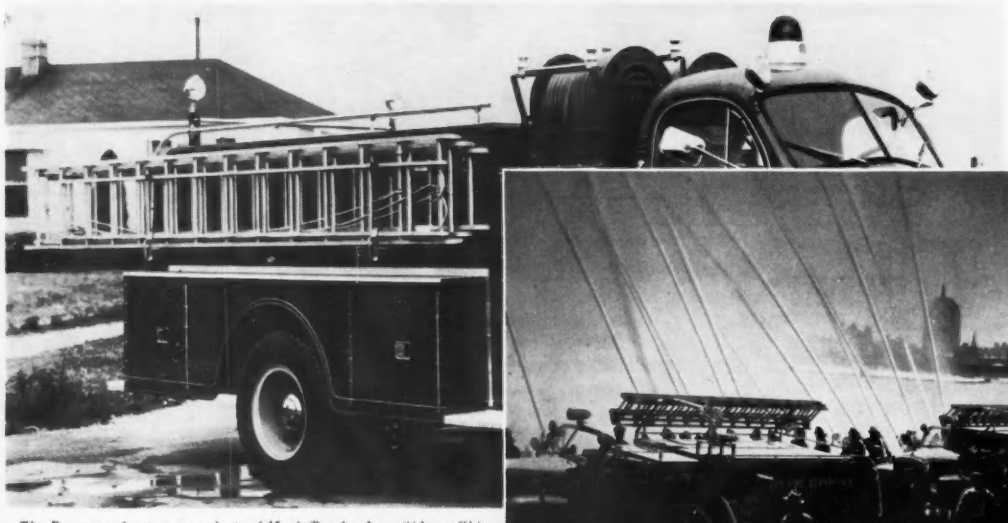
PACIFIC COAST REGIONAL OFFICE
132-140 Hawthorne St., San Francisco 7, California

CENTRAL STATES REGIONAL OFFICE
221 Crane St., Dayton 2, Ohio

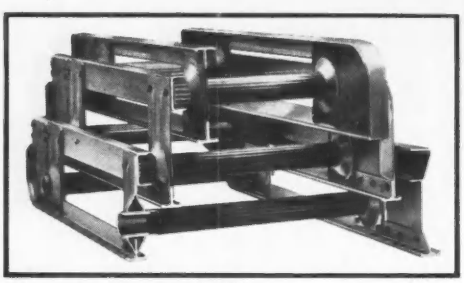
ATLANTIC COAST REGIONAL OFFICE
P.O. Box 750, Newark 1, New Jersey

BRANCHES: Atlanta, Baltimore, Boston, Chicago, Dallas, Dayton, Detroit, Los Angeles, New York, Newark, Philadelphia, Pittsburgh, Portland, Rochester, San Francisco, Seattle, Hamilton (Ontario).
Representatives and Distributors in all principal cities

These versatile Pumpers are equipped with lightweight Alco-Lite Ground Ladders

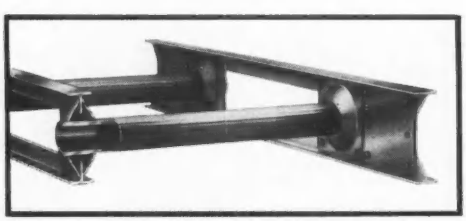


The Pumpers shown are products of Mack Trucks, Inc., Sidney, Ohio



Operate Automatically

Ladder sections extend — lock and unlock simultaneously. Spring loaded locks operate automatically. Channel slides the entire length of the ladder keep sections from becoming disengaged.



Permanent Rung-to-Rail Construction

Exclusive expansion bushing, rung to rail construction prevents rungs from twisting, turning, or breaking off.

They're lighter, easier to handle

The Alco-Lite Aluminum Ladders on the Mack Pumpers above feature open side rail, T-Channel design. All excess, weight adding bulk is eliminated. Only exclusive, Alco-Lite double gusset plate, expansion bushing construction makes this trim, modern design possible. These ladders more than meet any accepted tests for strength and safety.

Maintenance is almost negligible with Alco-Lite Aluminum Ladders. They are not affected by water, moisture, fumes or gases. They will not warp, rot, splinter, or burn.

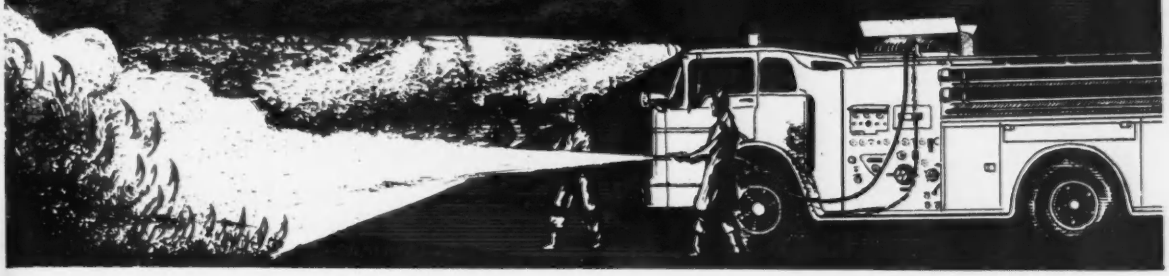
Because they are lightweight and trim, Alco-Lite Aluminum Ladders are easier to handle and easier to lift. They save precious minutes and require less physical effort when used at fires.

When you want easy to handle, safe, and almost maintenance free fire ladders, specify Alco-Lite Aluminum Ladders.

Aluminum Ladder Company ALCO-LITE

WORTHINGTON PENNSYLVANIA

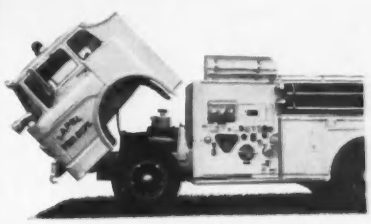
BE SURE OF YOUR "HEAD START" ON FIRE



. . . with a Pumper by HOWE

The only kind of "head start" you can get on a fire comes from the efficiency of your men and equipment. This HOWE DUAL FIRE FIGHTER is a unit with the efficiency that frees firemen for the fast action that cuts down losses. Main pump is Waterous CM-500 Electro-Matic, completely push button controlled. 4-Stage High Pressure Power Take-Off Pump, 60 GPM at 800 lbs. pressure, is supplied synchronized with the main pump to obtain maximum volume and pressure simultaneously. Pumps may also be used separately at maximum efficiency. 4-Stage Pump can be operated while truck moves fighting grass fires.

Other features are included to increase efficiency and reduce the number of men required to operate the truck. There are eight roomy built-in compartments to house generator, portable pump, masks, nozzles, etc. Heated compartment, protected by sliding steel covers, keeps hose reels, pump and piping from freezing. 1200 feet of 2½" hose carrying capacity. 750 gal. booster tank. Note that famous HOWE cab-to-body streamlining is maintained on the tilt-forward cab. Give your fireman every modern aid with a HOWE unit. Let HOWE build a pumper to fit your needs.



Enclosed forward cab provides exceptional visibility, tilts forward for access to the engine. This design provides maximum loading area for equipment on 135" wheel base and makes short turning radius possible—another advantage for fast action!

HOWE

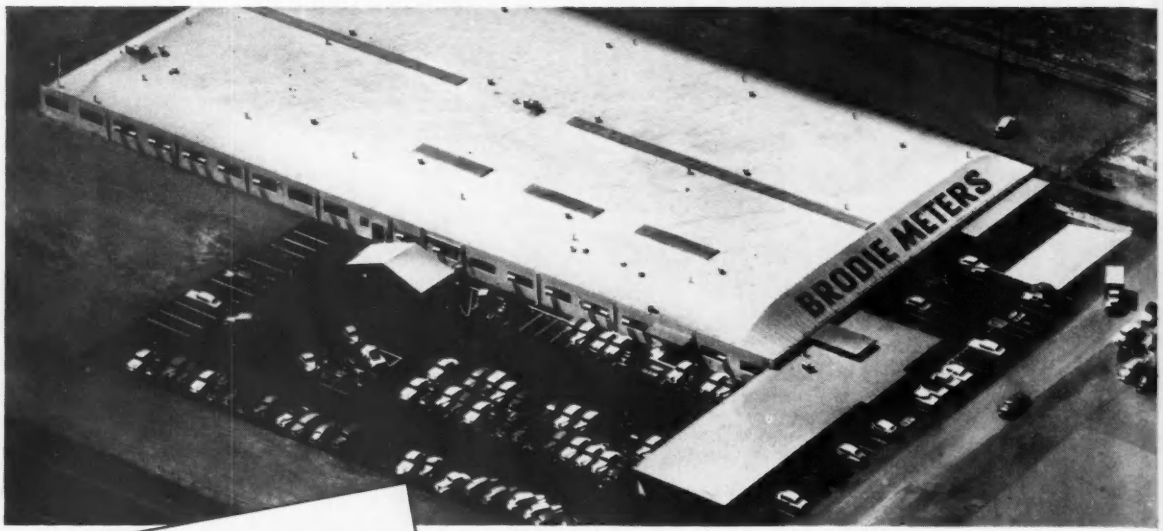
"dependable fire apparatus since 1872"

FIRE APPARATUS COMPANY

Member FAM (Fire Apparatus Manufacturers Association)

Dept. FM-98, 1400 W. 22nd St., Anderson, Indiana, U.S.A.

Gets Better FIRE and BURGLARY Protection
and SAVES $5,000 a year



Having located our plant on a large open site to permit continued expansion, we have an unusual degree of isolation. This multiplies the importance of ADT Automatic Protection Services in safeguarding our highly specialized machine tools, precision testing equipment, and costly inventories. While largely eliminating human error from our protection problem, ADT saves us approximately $5,000 per year.

S. Van Brodie

Manager of Production,
Corporate Director

Ralph N. Brodie Company

San Leandro, Calif.

Safeguards Its Property *Automatically*

Ralph N. Brodie Company is a pioneer developer of liquid meters and measuring instruments used by the petroleum industry. Consistent growth since 1927 led to the erection in 1952 of the company's large and thoroughly modern plant at San Leandro, California.

A combination of ADT Automatic Protection Services stands guard over the entire premises to detect and report fire, burglary and other dangerous conditions. Central Station Sprinkler Supervisory and Waterflow Alarm Service safeguards the sprinkler system against human failures and summons the fire department *automatically* when water flows. ADT Burglar Alarm Service guards doors, windows and vault against unauthorized entry and *automatically* notifies protective forces in case of attack.

Like the Ralph N. Brodie Company, thousands of business concerns from coast to coast use and endorse ADT Automatic Protection because they know that it gives greater security for property, profits and employees' jobs than can be obtained otherwise, and *at less expense.*

May we show you what ADT can do for you?

Whether your premises are old or new, sprinklered or unsprinklered, an ADT specialist will show you how an appropriate combination of ADT Automatic Protection Services can guard your property, effectively and economically. Call our local sales office if we are listed in your phone book; or write to our Executive Office.

ADT

Controlled Companies of

AMERICAN DISTRICT TELEGRAPH COMPANY

Executive Office:
155 Sixth Avenue, New York 13, N. Y.
A Nationwide Organization

Take a second look...

See us at Booth No. 41, I.A.F.C. Conference, September 16-19

Barton-American 4-stage, 750 GPM Pump entirely driven by main truck drive shaft.

. . . see why owners *stay* satisfied with American Fire Apparatus

At the start, you get much more of what *you* want when you select American Fire Apparatus. That's because you can specify *more features* that suit your particular needs. Then, because we prize satisfied owners, we protect you with superior quality construction all the way!

For example, *our Barton-American Four-Stage Pump is the* only *make driven* entirely *through the truck's main drive shaft*—never *through the lighter-duty transmission p.t.o. This eliminates danger of an overloaded p.t.o. And it assures you of lasting ruggedness that is trouble-free.*

Take a second look *personally.* You'll see *many* better-engineered features —reasons why owners *stay satisfied* with American Fire Trucks. Ask our representative for proof!

Contact your nearest American representative for full details.

Equipped with famous Barton-American Front-Mounted Fire Pump.

AMERICAN FIRE APPARATUS CO.

American

FIRE APPARATUS CO. "Always Pioneering with Better Engineering"

Main Office: Main Street Rd., Battle Creek, Mich. Plants at: BATTLE CREEK, MICH., MARSHALLTOWN, IA., STRATFORD, ONT.

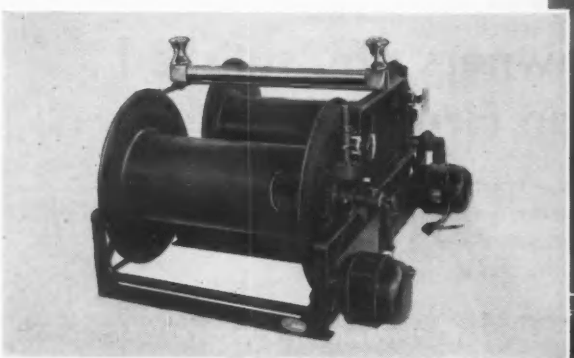
Proving Ground for HANNAY Hose Reels

HANNAY Reels outperform all others in daily use . . . the most rugged test of fire-fighting equipment!

Performance in actual use counts more than manufacturer's claims and test performance in fire-fighting equipment.

Over 25 years of dependable "in service" performance have made HANNAY reels first choice among firemen who demand the best equipment.

HANNAY quality is more than built-in. it's "designed-in." Specifications for design and performance are drawn by experienced, working firemen . . . your guarantee of superior performance when you *specify* Hose Reels by HANNAY.



These features make HANNAY HOSE REELS the *standard of quality* for fire-fighting equipment.

- **TRU-CIRCLE DRUM**
- **REINFORCING DRUM DISCS**
- **FULL-FLO HUB ASSEMBLY**
- **HEAVY DUTY EXPLOSION-PROOF MOTOR**
- **BALL BEARING SWING JOINT**
- **POSITIVE SPROCKET & CHAIN DRIVE**
- **HANNAY electric rewind conversion kits and chrome roller and spool assemblies are available for low cost modernization of existing equipment.**

Designed by Firemen for Firemen . . . . *Hose Reels by*

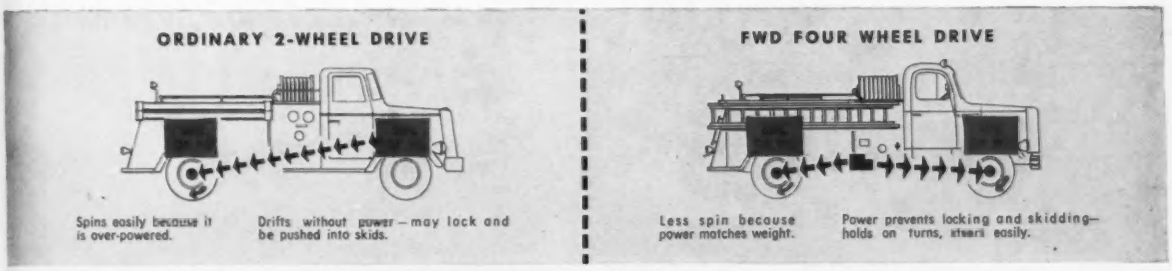
HANNAY®

For information about the complete Hannay line, stop in and visit us at the IAFC Convention, Booth 56 in the Los Angeles Shrine Exposition Hall.

SUSTAINING MEMBER

CLIFFORD B. HANNAY & SON, INC., WESTERLO, N. Y.

most FWD differences are in the chassis Almost any pumper or aerial can have almost any trim or fire-fighting equipment hung on it. But, only Four Wheel Drive has multi-wheel drive for the safest control on any kind of roadway . . . in any kind of weather or traffic condition. You won't appreciate this fully until you ride and drive an FWD. Ask our fire specialist to arrange for it. THE FOUR WHEEL DRIVE AUTO COMPANY • CLINTONVILLE, WISCONSIN • CANADIAN FACTORY • KITCHENER, ONTARIO.


ORDINARY 2-WHEEL DRIVE
Spins easily because it is over-powered.
Drifts without power—may lock and be pushed into skids.
FWD FOUR WHEEL DRIVE
Less spin because power matches weight.
Power prevents locking and skidding—holds on turns, steers easily.

BUILDERS OF AMERICA'S FINEST AND SAFEST

More for your Money!

MORYSVILLE

FIRE, FIRE-CRASH, RESCUE and EMERGENCY UNITS and SPECIAL BUILT FIRE BODIES

MODEL U-232 FIRE-CRASH TRUCK BODY

MODEL L-123 RESCUE UNIT

HEAVY DUTY FIRE TRUCK WITH 500 GAL. WATER TANK FOR 1½-TON CHASSIS

MODEL L-186 SPECIAL FIRE BODY

Dependability • Versatility • Original Design

Morysville bodies feature top quality materials, precision workmanship, extra-rugged construction and original modern design. Compartments are arranged for handy stowage of fire fighting, first aid and life saving equipment, helmets, rain gear, tools, tanks, portable pumps and generators, etc. Compact Morysville units are also ideal for fire investigation and reclamation. Ask about the model you need. Let us prove you get "More for your Money in Morysville."

MODEL L-182 FIRE AND CRASH TRUCK BODY

MODEL L-168A FIRE TRUCK BODY

MODEL L-183 RESCUE UNIT

Also a complete line of Utility, Service and Line Bodies, Pick-up and Special Service Bodies, Wreckers, Bottle Bodies, etc., for extra years of low-cost, faithful service.

Write for FREE Literature

MORYSVILLE Body Works INC.

813 SOUTH READING AVE., BOYERTOWN, PENNA.
DISTRIBUTORS IN PRINCIPAL CITIES

SIMPLICITY...

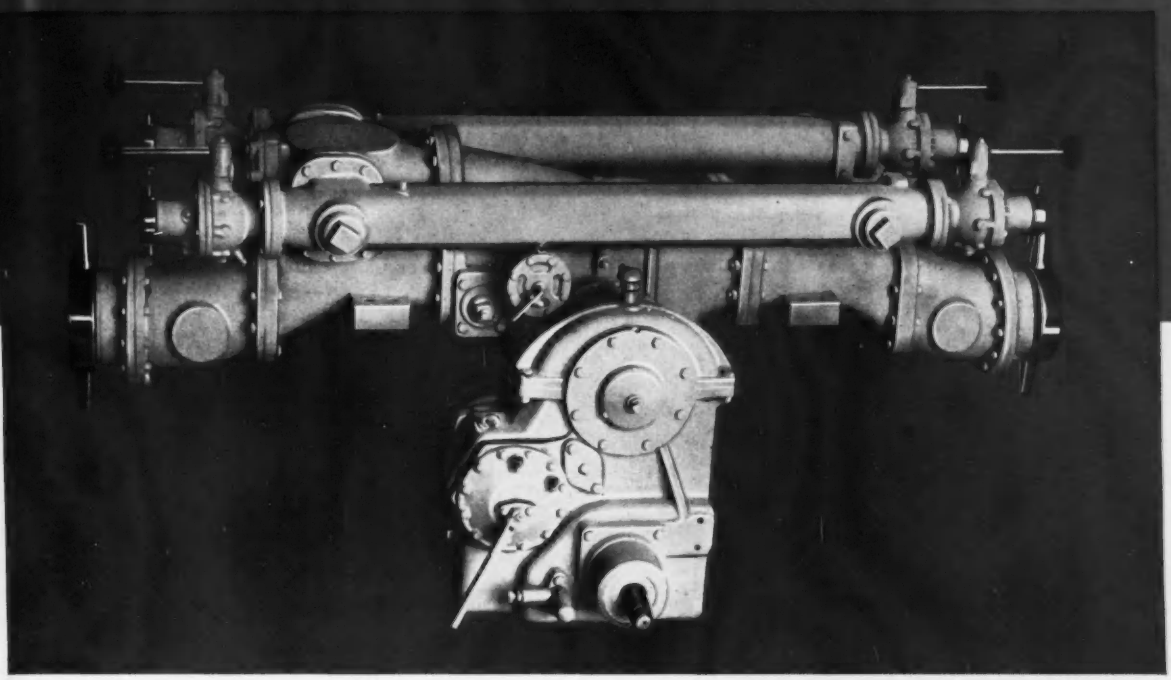
For years the complexity and the over-all cost of pumpers have been increasing. Hale has constantly worked to reverse this trend—and at the same time produce ever more efficient pumps.

Now, by taking advantage of the greatly increased speed range of today's engines, Hale has produced a new series—the "Hi-Stage"—not only extremely simple to operate but simpler in design and at a lower over-all cost.

Efficient and clean-cut in design, the new HALE "Hi-Stage" Centrifugal Fire Pumps exceed with ease the Class A Underwriters' ratings shown below.

Every "Hi-Stage" gives the operator instant command of the complete pumping range with one control —the engine throttle.

We believe the "Hi-Stage" pumps represent one of the most useful forward steps in practical fire fighting in many years.

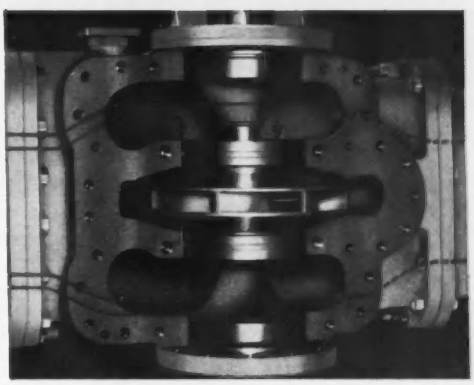


Underwriters' Class A Ratings:

Model	Ratings
• QSM10	1000 GPM at 150 lbs.
• QSM12.5	1250 GPM at 150 lbs.
• QSM15	1500 GPM at 150 lbs.

PLUS FEATURES:

- Simplicity of Design and Operation . . . No Transfer or Check Valves.
- Double Suction Impeller . . . water feeds into both sides of impeller from either side of apparatus . . . for Volumes substantially over Pump's Rated Capacity.
- Large, Streamlined Waterways and reduced Impeller Disc Friction for Maximum Efficiency.
- Many Gear Ratios Available so that Pumps can take advantage of a Wide Choice of Engines and Speeds.
- Push-Button Priming.
- New, Simplified Panel-Mounted Relief Valve Control.
- Extra Rugged Pump Body and Bearings for Long Life.
- Notable for Serviceability.



This diagram shows how water feeds into the Hale Double Suction Impeller from either side of apparatus. Solid red arrows show water coming into impeller when suction is feeding from left side of apparatus; broken lines show direction of water if suction is taken from right side of apparatus.

NOTE: Be sure to see the HALE display in Booth #64 at the Los Angeles Convention.

Write today for Bulletin No. 365 on the "Hi-Stage" series, and other valuable information on Hale fire pumps . . . built in all standard capacities.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PENNSYLVANIA

COMPARE IT

For Compactness, Strength and Ease of Handling!

GOODALL "EZ flex"

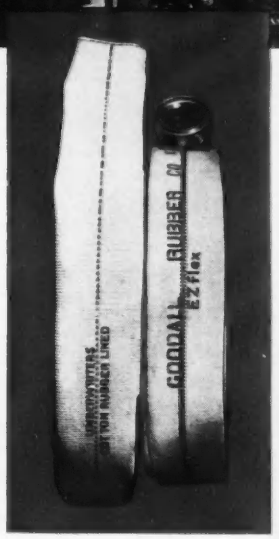
THE *Modern* FIRE HOSE

Stronger! Lighter! Longer Lengths!

Acclaimed as the most important development in fire hose construction in over half a century, "EZflex" is proving its sensational advantages in fire departments throughout the country.

JACKET—A combination of high-tensile fibres of outstanding strength, woven by a special process, assuring highest resistance to pressure, wear, weather and rough handling. Size-for-size, "EZflex" pressure-resistance is equal or superior to the heavier and stiffer conventional cotton jackets, despite its much lighter weight. The tightly woven fabric is virtually snagproof, and is treated to resist mildew.

LINING—A light-weight yet long-wearing reinforced rubber lining, bonded firmly to the surrounding jacket, and having a perfectly smooth waterway to insure a full, fast flow. In combination, the "EZflex" jacket and lining provide a fire hose far ahead of conventional types in strength, flexibility, durability, ease of handling, and economy. "EZflex" is available in continuous lengths of 100 feet, which means fewer couplings. Single Jacket, sizes 1½" to 2½". Double Jacket, sizes 1½" to 3".



COMPARE! A 50 ft. coil of standard Cotton Rubber Lined Fire Hose weighing 21 lbs., and a **100 ft.** coil of "EZflex" Fire Hose weighing only **19 lbs.** What a difference in compactness and ease of handling!

UNDERWRITERS *and* FACTORY MUTUAL APPROVED FM

"LONG-LIFE" HIGH PRESSURE BOOSTER and FOG HOSE

A new Goodall hose built especially for use with fog nozzles to assure utmost strength and safety at working pressures to 800 lbs. Light weight—excellent flexibility—easy to handle in a hurry. Also ideal for booster service. Molded-and-braided construction; maximum lengths of 500 feet; ¾" and 1" I.D. Tough rubber tube; two rayon braid reinforced carcass in both sizes; wear-resistant red rubber cover.

Make a note to visit our booth—No. 92A—at the I.A.F.C. Convention in Los Angeles. "EZflex" and "Long-Life" will be there!

Standard of Quality—Since 1870

HOSE • BELTING • FOOTWEAR • CLOTHING
AND OTHER INDUSTRIAL RUBBER PRODUCTS

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PERSONNEL — ALL
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Specially made with your department name.

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32 GREENWOOD AVENUE
TOLEDO 5, OHIO, U.S.A.

Equipment News

(*Continued from page 62*)

"Penet-Ray" Warning Light

Here's one of the handiest vehicle warning lights on the market: the new "Penet-Ray" 360° revolving light with either magnets and 10-foot extension cord, plug and socket and drive protector shield for dashboard mounting or with permanent roof or cab mount, with switch. Write to *Sireno Co., Inc.*, 214 William Street, New York 38, New York.

●

Have you ever wished for a handy portable reel for all that rope or wire-pulling cord? *Hykon Manufacturing Company*, East State Street, Alliance, Ohio, is now marketing Model JL-9 for 250 ft. of ½-in. rope and larger sizes for 3- and 4-wire cable. . . . Yonkers, New York, is installing a new decentralized *Gamewell* municipal fire alarm system.

PROMOTIONAL STUDY COURSE for ALL RANKS

The National Preparatory Institute offers a course of instruction in Fire Prevention, Fire Protection and Fire Fighting which will help you to improve your knowledge of fire field subjects and assist you in your studies for promotion.

PRICED FOR A FIRE FIGHTER'S BUDGET!

Engine and Ladder Company procedures — inspections, hydraulics, salvage, overhauling — these and many other subjects are covered.

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Ask for special information on Massachusetts Civil Service Examination preparation.

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NIELSEN-RIONDA

STA-BRITE

BADGES

Compliment your uniform and appearance with all the handsome beauty of the EXCLUSIVE NIELSEN-RIONDA SOLID FLAT BACK BADGE.

RUGGED DURABILITY . . . including hat and coat attachments, center emblems and numbers all guaranteed for 10 years against separating from the badge body.

Check the new STA-BRITE BADGES. Rich golden colored metal throughout the entire badge body. Easily maintained for a lifetime of sparkling golden brilliancy.

Send for free 32-page catalog containing complete information and illustrating the full line of badges in all finishes.

NIELSEN-RIONDA, INC.
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WATER — WHERE YOU NEED IT!
— WHEN YOU NEED IT!

With the Portable FOL-DA-TANK

This action photo from the Lake Geneva Regional News, Wisconsin, shows the Fol Da-Tank at work. Water from the tanker is being dumped into the Fol-Da-Tank so that it can return to the nearest water supply for another load thereby assuring a constant supply of water from which to work.

Where the nearest water supply is often miles from the scene of the fire, Fol-Da-Tank acts as a central reservoir from which pumper truck or portable pumps can draft. Readily carried, the Fol-Da-Tank can be set up for use in sixty seconds.

Available in 600 and 1000 gal. sizes. Contact your local equipment supplier or the manufacturer.

Manufactured Only By
FOL-DA-TANK COMPANY
Box 361, Rock Island, Illinois

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Bright Colored Tumblers for Gifts or Anniversaries

Looking for gifts, awards or fund raising items? Here are bright colored 11½-ounce tumblers for any occasion at about 16 cents each in lots of 288 plus a $7.50 art charge on the original order. Tumblers with a graduated measuring scale for kitchen use with your department telephone number imprinted could be popular. Write to *Keene Advertising Specialties*, 22 Church Street, Boston 16, Mass.

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You'll lengthen hose life and save time and labor in cleaning, drying and loading with a hose washer, electric hose dryer and mobile hose storage and loading rack. Get free folder from *Circul-Air Corp.*, 575 East Milwaukee, Detroit 2, Mich. . . . Your pure air masks require a dependable supply of compressed air. Write for free catalog on Cornelius portable compressor to *Cornelius Co.*, 550–39th Ave., N.E., Minneapolis 21, Minn. . . . Keep this name in mind for plaques, awards and honor rolls: *International Bronze Tablet Co., Inc.*, 150 West 22nd St., New York 11, N. Y. . . . Portable electric power for rescue trucks and night fire fighting is described in folder B-43. Drop a note to *Kohler Co.*, Kohler, Wisc. . . . Here's a valuable addition to your library, free for the asking: the "Invincible Nozzle" Catalog No. 61 from *F. N. McIntire Brass Works, Inc.*, 377 Putnam Ave., Cambridge 39, Mass. . . . Wearing apparel requires careful manufacture for long, useful life in fire fighting. Get free catalog and fabric samples from *Midwestern Safety Mfg. Co.*, Mackinaw, Ill. . . . For your station house folding tables and chairs, look to *Monroe Co.*, 277 Church St., Colfax, Iowa.

Leading apparatus builders furnish "Circle-D" lights. You'll find useful ideas in Catalog P2 from *Natale Machine and Tool Co.*, 339 State Highway No. 17, Carlstadt, N. J. . . . Solid flat back and "Sta-Brite" finish are features of badges described in a 32-page illustrated catalog. Write *Nielsen-Rionda, Inc.*, Dept. FM, 40 John St., New York 38, N. Y.

"Continuous Flow" hose reels for fire apparatus and for foam and standpipe systems (FM approved) are specialties of *Wirt & Knox Manufacturing Company*, 23rd & York Sts., Philadelphia 32, Pa.

BUYING NEW EQUIPMENT?

Consider the products advertised in this issue.

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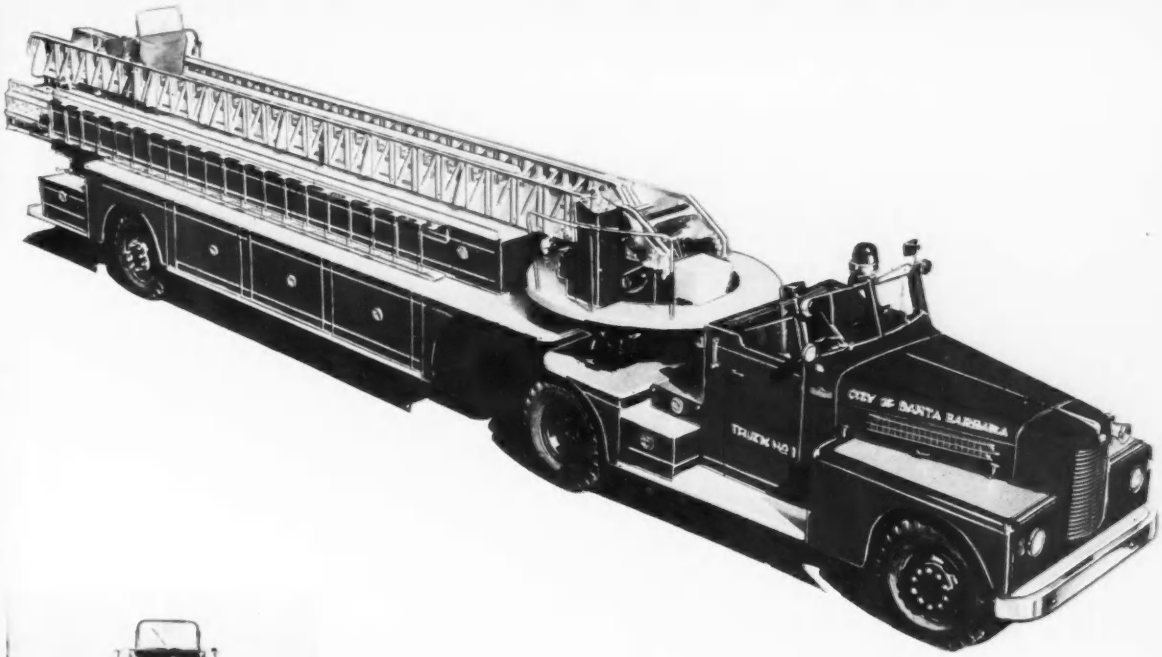
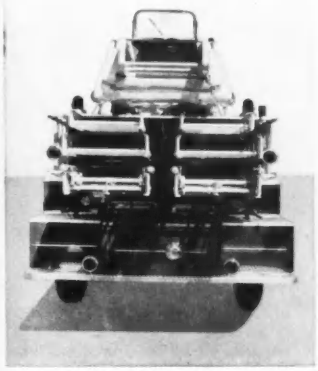
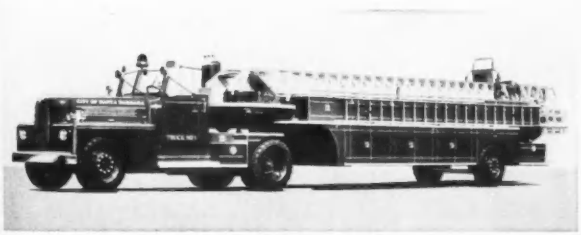




EFFICIENCY AND RELIABILITY have long been built-in features of Pirsch Fire Apparatus; features which are so essential in emergency equipment of this nature when saving of lives and protection of property depend upon its functioning promptly and efficiently.

The first all-powered Aluminum-Alloy Aerial Ladder was built by Pirsch nearly a quarter of a century ago, since then large numbers of Pirsch Aerial Ladder Trucks in various sizes have been delivered to fire departments throughout the United States and several foreign countries; repeat orders have been numerous from a great many of these users affirming that Pirsch Aerials are reliable and efficient.



The 85′ Pirsch Senior Aerial Ladder Truck featured above has been delivered to City of Santa Barbara, California

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100′ AERIAL LADDER"

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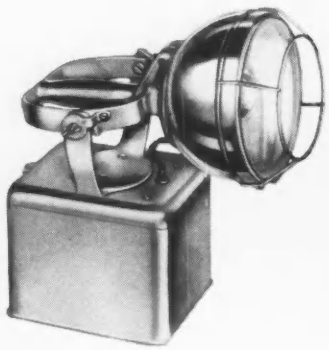

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Super-6 . . . **$40.00**
Running board holder . . . **$3.60**
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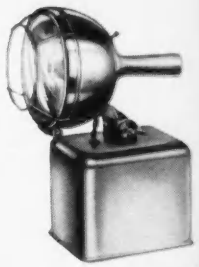
Type WS-6 *(Illus. above left)* The ideal light for chiefs and officers. Especially valuable for rescue work . . . where seconds count, it is on the job before mounted searchlights can be positioned. Operates as powerful searchlight or worklight. One battery charge gives 24 hours continuous service as worklight or 6 to 8 hours as searchlight . . . much longer if used intermittently. Only 12 lbs. including battery! Convenient finger-tip, self-balancing handle and beautiful duro-satin finish. Available with running board holder and smoke-fog penetrating lens as optional extras. **Type Super-6** *(Illus. right)* is the same fine basic unit except with rugged one-piece handle and housing.



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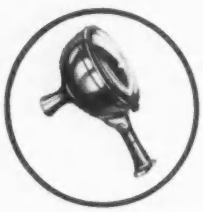

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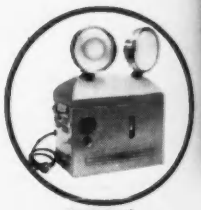

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